


SPCL  
SB  
354.6  
C2  
F783  
1884



Digitized by the Internet Archive  
in 2012 with funding from  
Brock University - University of Toronto Libraries

<http://archive.org/details/reportoffruitgro1884frui>







REPORT  
OF THE  
FRUIT GROWERS' ASSOCIATION  
OF ONTARIO,  
FOR THE YEAR 1884.

④

---

Printed by Order of the Legislative Assembly.

---



Toronto:  
PRINTED BY GRIP PRINTING AND PUBLISHING CO., FRONT STREET.  
1885.



# CONTENTS.

---

	PAGE.
LETTER OF TRANSMISSION .....	9
PROCEEDINGS OF ANNUAL MEETING .....	10
Directors' Report.....	11
Treasurer's Report .....	11
Annual Address of the President.....	12
Report of Committee on the Address .....	19
DISCUSSIONS AT THE ANNUAL MEETING IN BARRIE .....	20
New Varieties of Strawberries .....	20
Top Grafting .....	26
Mulching.....	28
Best Apples for the County of Simcoe.....	34
Best Pears for the County of Simcoe .....	39
Hedges in the County of Simcoe .....	40
Best Trees for the County of Simcoe .....	41
Cultivation of Mushrooms .....	41
Most profitable Apples for shipment to Europe.....	41
The most profitable Raspberry.....	42
The best Blackberries for Simcoe.....	42
The hardiest and earliest Grapes.....	43
Address of Welcome from the Mayor .....	44
The Maple Leaf Insect .....	45
Floriculture in the Public Schools.....	45
Covering Grapes in Winter .....	54
Report on the Exhibit of Fruit.....	54
Election of Officers and Directors.....	57
Roadside Tree-Planting .....	57
Canning Factories .....	63
Marketing of Small Fruits.....	64
Grapes for the County of Simcoe.....	67
The Ontario Apple.....	73
Fruit Exhibit at the Peninsular Fair.....	74
Fruit-Growing in the County of Renfrew.....	75

	PAGE.
DISCUSSIONS AT THE WINTER MEETING IN WOODSTOCK.....	77
The President's Opening Address.....	77
The Apple Market, and what kinds to grow .....	80
Establishing an Orchard.....	88
Fruit-Growing in Division No. 5.....	89
Peach Tree Borers and the Yellows.....	91
Profits of Apple and Peach-Growing.....	92
Treatment of the Codling Moth and the Curculio.....	93
Address of Welcome from the Board of Trade.....	94
Apple Culture in the Cold North.....	94
Protection of Plants, Shrubs and Trees in Winter.....	100
Non-Professional Floriculture .....	102
Apples as food for Live Stock.....	109
Cultivation of Celery—Methods and Varieties .....	111
Cultivation of Plants and Trees in the School-Yard.....	113
Best Hardy Perennial Flowering Plants for Cultivation.....	117
Planting Evergreens for Windbreaks.....	119
Are Honey-Bees of benefit to fruit blossoms.....	120
Best ten varieties of Monthly Roses .....	120
Effect of east winds on Fruit Blossoms and Fruit.....	120
Culture of Small Fruits for Market.....	121
A Paper on Garden Work.....	127
Ornamental Trees and Shrubs.....	130
Treatment of the Ground Aph's.....	135
Cultivation of Berry Fruits for Market.....	137
The Question of Fences on the Farm.....	137
Labelling Fruit at Exhibitions.....	138
Cause, Prevention and Remedy of the Black Knot.....	138
Report on New Fruits.....	139
Report on the English Sparrow and other Birds.....	142
Improving Plants and their Products by Selection .....	145
The Cultivation of Cranberries.....	149
Mistakes of Fruit-Growers.....	150
Quince Culture .....	151, 155
The American Pomological Society .....	153
Report on the Cultivation of Roses .....	156
Cause and Prevention of Black Scab on the Apple.....	164
Best Varieties of Pears for Market .....	166



	PAGE.
DISCUSSION AT THE SUMMER MEETING IN BERLIN.....	171
The English Sparrow .....	171
Effect of Painted Walls on Plant Life .....	175
On the Propagation of Currants.....	176
How to Destroy the Thrip.....	177
Black Knot on Plum and Cherry Trees .....	179
Why Healthy Trees fail to fruit .....	181
Apples for the English Market.....	182
Best Fertilizers for Raspberries .....	184
Growing Fruit Trees in Sod.....	185
Value of spent Lime as Manure .....	186
Value of Coal Ashes as Manure .....	187
Windbreaks.....	187
Best Fruits for Berlin and Vicinity.....	192
New Varieties of Strawberries.....	196
New Varieties of Raspberries .....	199
Best time to prune Fruit Trees.....	203
The Curculio, and how to treat it.....	205
New Varieties of Blackberries .....	207
Best Varieties of Grapes, and how to prune and train them .....	208
Culture and Management of Roses .....	213
On Building a Greenhouse.....	215
THE RENFREW FRUIT-GROWERS' ASSOCIATION.....	218
COUNTY REPORTS ON VARIETIES OF FRUIT GROWN IN ONTARIO.....	221



ANNUAL REPORT  
OF THE  
FRUIT GROWERS' ASSOCIATION  
OF THE  
PROVINCE OF ONTARIO FOR THE YEAR 1884.

---

*To the Honourable the Commissioner of Agriculture:*

MY DEAR SIR,—I have much pleasure in submitting for your perusal the Sixteenth Annual Report of the Fruit Growers' Association of Ontario. The discussions at the three several meetings which have been held during the year have been very carefully preserved and form a very valuable part of the report, embodying the experience of practical men in matters of importance to every cultivator of the soil.

I have the honour to be,

Your most obedient servant,

D. W. BEADLE,

Secretary.

ST. CATHARINES,

November 24th, 1884.

---

## ANNUAL MEETING.

---

The Annual Meeting of the Fruit Growers' Association of Ontario was held in the Town of Barrie on the first and second days of October, 1884. The President, Mr. Saunders, of London, in the chair. The first day was spent in the discussion of questions relating to the cultivation of fruits, etc., a full report of which is appended, and on the morning of the second day the Directors submitted their Annual Report, the Report of the Treasurer and of the Auditors was read, the President delivered his annual address, and the meeting proceeded to the election of officers for the ensuing year, with the following result :

President—William Saunders, F.R.C.S., London. Vice-President—P. E. Bucke, Esq., Ottawa.

Directors—Division No. 1, John Croil, Aultsville ; No. 2, A. A. Wright, Renfrew ; No. 3, D. Nicol, Cataraqui ; No. 4, P. C. Dempsey, Trenton ; No. 5, Thomas Beall, Lindsay ; No. 6, W. E. Wellington, Toronto ; No. 7, James Goldie, Guelph ; No. 8, A. M. Smith, St. Catharines ; No. 9, T. H. Parker, Woodstock ; No. 10, A. McD. Allan, Goderich ; No. 11, John Little, Fish Creek ; No. 12, Hugh Smith, Sarnia ; No. 13, Chas. Hickling, Barrie.

Auditors—John Carnegie, Peterborough ; Chas. Drury, Crown Hill.

D. W. Beadle, St. Catharines, was appointed Secretary and Treasurer by the newly-elected Board of Directors.

---

## THE AGRICULTURAL DIVISIONS.

- No. 1. Stormont, Dundas, Glengarry, Prescott and Cornwall.
- “ 2. Lanark, Renfrew, City of Ottawa, Carleton and Russell.
- “ 3. Frontenac, City of Kingston, Leeds, Grenville and Brockville.
- “ 4. Hastings, Prince Edward, Lennox and Addington.
- “ 5. Durham, Northumberland, Peterborough, Victoria and Haliburton.
- “ 6. York, Ontario, Peel, Cardwell and City of Toronto.
- “ 7. Wellington, Waterloo, Wentworth, Halton, Dufferin and City of Hamilton.
- “ 8. Lincoln, Welland, Haldimand and Monck.
- “ 9. Elgin, Brant, Oxford and Norfolk.
- “ 10. Huron, Bruce and Grey.
- “ 11. Perth, Middlesex and City of London.
- “ 12. Essex, Kent and Lambton.
- “ 13. Algoma, Simcoe, Muskoka and Parry Sound.



## DIRECTORS' REPORT.

*To the Members of the Fruit Growers' Association of Ontario :*

GENTLEMEN,—This is the first time in the history of this Association when its Annual Meeting has been held apart from that of the Provincial Agriculture and Arts Association. Your Directors felt that inasmuch as several meetings of the Association had already been held in the City of Ottawa, and many other places were very desirous that we should hold a meeting in their municipality, we would be consulting the welfare of the Association, and accomplishing a greater good, to hold our present meeting in this pleasant Town of Barrie. The paramount object of this Society is the dissemination of information on fruit-growing, forestry, and general horticulture, and we believe that one very important means of doing this is by the holding of our meetings in as many different places as possible, and not by centralizing them in the large cities. We think that the experience of the past fully justifies this opinion.

We find that the membership during the past year has not quite equalled that of the preceding, being for this year 2,478, as against 2,600. We had hoped that it would have increased to at least 3,000, instead of diminishing, for the small annual fee of one dollar is fully returned, yea, more than repaid, by the information contained in its publications. The Treasurer's Report will show a small balance in hand, not quite enough, however, to pay expenses to the end of the year.

The meetings of the Association have been well attended. The winter meeting held at Woodstock was more than usually interesting, owing largely to the presence with us at that time of Mr. Woodward, now one of the editors of the *Rural New Yorker*, Mr. Garfield, the Secretary of the Michigan Horticultural Society, and Mr. George Scott of Ann Arbor, Michigan,—all of them able and ready to communicate of their large experience in a way that added materially to the interest of the occasion. The summer meeting was held in Berlin, which, though not so largely attended, was the means of eliciting much valuable information. The discussions at both these meetings were taken down by an excellent stenographer, and will appear in full in our annual report.

We now return to you the trust committed to us, again reminding you that there is no occasion for complaint that the same men are continued in office too long, as the remedy is wholly in your own hands to select such officers and directors for the ensuing year as you think will best promote the interests of this Association.

Respectfully submitted,

WM. SAUNDERS, *President.*

## TREASURER'S REPORT.

<i>Receipts.</i>	\$	cts.
Members' fees .....	2,478	00
Government grant.....	1,800	00
Advertisements .....	48	92
Total receipts .....	4,326	92
Balance from last audit .....	637	90
	\$4,964	82

*Disbursements.*

Audit, 1883 .....	\$20 00	
Reporting three meetings.....	175 00	
Express and freight.....	34 28	
<i>Canadian Horticulturist</i> .....	2,129 00	
Postage .....	158 42	
Stationery .....	14 15	
Caretaker of rooms .....	3 00	
Telegraphing.....	2 24	
Guarantee premium.....	20 00	
Commissions, collecting members' fees .....	223 86	
Directors and Committees' expenses .....	733 77	
Plant and seed distribution.....	474 05	
Advertising and printing.....	127 25	
Sundries .....	13 14	
Clerk .....	150 00	
Secretary .....	200 00	
Editor .....	400 00	
Total disbursements .....		\$4,878 16
Balance on hand .....		86 66
		<hr/> \$4,964 82

BARRIE, October 1st, 1884.

We, the undersigned Auditors have duly examined the Accounts of D. W. Beadle, Secretary-Treasurer of the Fruit Growers' Association of Ontario, and find them properly vouched for and correct.

JOHN CARNEGIE, }  
HENRY BIRD, } *Auditors.*

## ANNUAL ADDRESS OF THE PRESIDENT OF THE FRUIT GROWERS' ASSOCIATION OF ONTARIO.

GENTLEMEN,—The progress which has been made in fruit culture in Ontario during the past twenty years is astonishingly great. Previous to this our tables were scantily provided with fruit, and a large proportion of that consumed in our Province was imported from the United States. Now we grow the most luscious fruit in the greatest abundance for home consumption, and have a large surplus for export. At one time it was believed that the climate of most parts of our Province was unfavourable for fruit growing, but experience has demonstrated that it is peculiarly adapted for developing the finest quality and highest flavor, particularly of apples, and hence the apples of Ontario are now deservedly classed among the most highly esteemed fruits both in Europe and the United States. In the progress made this association, over which I have of late had the honour to preside, has been an important factor,—indeed it may be said to have been the mainspring, the moving as well as the directing power.

The record of the work of our Association since its incorporation in 1868 is well known from the excellent reports annually published, but there are not many who are familiar with the particulars relating to its origin and early history. To the late Judge Campbell, of Niagara, and the late Dr. Craigie, of Hamilton, belong the honour of being its originators. The idea had occurred to them that an organization amongst fruit growers, followed by meetings at stated periods, would be productive of good and stimulate the progress of fruit culture throughout the Province. They communicated their views to the late Dr. Beadle, of St. Catharines, and to Mr. George Leslie, Sen., of Toronto, who both heartily endorsed the scheme. Finally it was resolved to call a meeting which was

held on the 19th of January, 1859, in the Board room of the Mechanics Hall in the city of Hamilton, the four gentlemen named with fourteen others being present. It was unanimously decided to form a Fruit Growers' Association for Upper Canada, and Judge Campbell was made its first President; Dr. Hurlburt, 1st Vice; Mr. George Leslie, 2nd Vice; Arthur Harvey, Recording Secretary; I. D. Humphreys, Corresponding Secretary; and Edmund Kelly, Treasurer. The first item in Mr. Kelly's treasurer's book is an entry of \$10 received from Judge Campbell, who thus became the first life member. Unfortunately he was not destined to enjoy his honors long, for within a year death removed him from the little circle. He was sadly missed and for a time the association languished; but at length, after a lapse of nearly two years, through the efforts of Dr. Craigie the members were called together again on the 21st of September, 1860, during the time of the Provincial Exhibition in Hamilton, when nine members responded to the call. Dr. Hurlburt, the first Vice-President, occupied the chair. After a brief session they adjourned until the 24th of the following month, each member being requested to bring with him then specimens of fruit. There were 17 present at this meeting, a good show of fruit was made, and some profitable discussions took place. Before adjourning it was resolved to meet again on the 16th of January, 1861, that being the time fixed for the annual meeting and the appointment of officers. At this meeting the Vice-President, Dr. Hurlburt, delivered an address on the culture of the grape in Canada; three fruit reports were also read. During the period referred to Mr. John A. Bruce had succeeded Mr. Kelly as Treasurer, and at this meeting the late Judge Logie, of Hamilton, was elected President; Dr. Hurlburt, Secretary, and our present efficient Secretary-Treasurer, D. W. Beadle, was appointed to the office of Treasurer. Soon it was found inconvenient to have the office of secretary distinct from that of the treasurer, when the two offices were combined and given to the present incumbent, who has served you faithfully and acceptably for twenty-two long years. He has during this period devoted his best energies to the work of the association, has shown untiring zeal and great ability, and is growing grey in that service to which he has devoted so large a portion of his life. While I acknowledge with pleasure the valuable aid rendered by my much esteemed predecessors in the presidential chair, the lamented Logie, W. H. Mills, Dr. Burnet, and P. C. Dempsey, and esteem it an honour to wear their mantle, I feel free to say, with no fear of contradiction, that the Fruit Growers' Association of Ontario owes its present high position and influence more to its able Secretary than to any other man belonging either to the past or the present. Judge Logie held the office of President for six years, during which period meetings were regularly held two or three times a year, and much information brought out in the discussion of questions relating to fruit culture. These meetings were held in Hamilton, St. Catharines, Toronto, Grimbsy, and Paris, and were productive of much good. Some of the information gained was published in pamphlet form, issued in 1863, in which returns made by the secretaries and fruit committees from thirty counties of Ontario were printed, enumerating the varieties of fruit most successfully grown. In January, 1867, the society had attained a membership of thirty; at that meeting Judge Logie retired from office and was succeeded by Mr. W. H. Mills. During the year following the society was incorporated under the Agriculture and Arts Act under the name of the "Fruit Growers' Association of Ontario," and became entitled to receive from the public funds of the Province a grant of \$350 a year. The wise policy of our government in granting us this substantial aid in our work, and thus enabling us to collate and publish the experience gained by the active workers among our members, has been productive of the happiest results.

From that time forward the work has made rapid progress; the membership increased to over 200 the following year, and the number now amounts to 2,500; a vast accumulation of the most useful and practical information has been scattered broadcast over the land; many of the problems which worried the early fruit-grower and taxed his limited resources have been solved, and the difficulties in the way of successful fruit-culture lessened. We may point with pardonable pride to our fifteen annual reports and the six volumes of the Canadian Horticulturist, publications whose advent is hailed with pleasure by all lovers of fruits and flowers. It has been the aim of our Association to give correct information as to the varieties of fruit best adapted to the varying conditions of soil and climate found in the several sections of our Province, how best to overcome



the difficulties in the way of progress, and to encourage fruit-culture and horticulture in all its departments. The enlargement of our field of usefulness has been attended with increased expenses which have been met partly by an increased grant from the public funds and partly by the subscriptions of our members. In expending the moneys so received, it has been the constant aim of your officers and directors to confer the greatest benefits possible on the largest numbers, and much success has attended their efforts. By the yearly distribution of plants, trees, etc., the grounds of every member have to some extent been made experimental. Many promising varieties of fruits have been tested, and in many instances they have proved exceedingly valuable to their possessors. Among the more valuable fruits which have thus been brought into general notice in Ontario are the following: Apples—Grimes' Golden, Ontario, Swayzie Pomme Grise, and Canada Baldwin. Pears—Clapp's Favourite, Beurre d'Anjou and Flemish Beauty; the McLaughlin and Glass' Seedling plums; and of grapes, the Brighton, Moore's Early and Prentiss, besides several small fruits of good quality. Among the things distributed are some which have only partially succeeded, but this is what was expected; if universal success had been assured it would have been no experiment. Although failure is by no means gratifying, we often learn as much from it as from success; indeed, nothing will make one pause and think and endeavour to trace out the relationship between cause and effect more than occasional failure.

While on this subject of distribution it is fitting that I should call the attention of members to the selection which has been made for this purpose for next year. One of the things offered is the hardy western Catalpa, *Catalpa Speciosa*, a handsome tree with large soft foliage, and bearing fine clusters of beautiful flowers early in the summer, succeeded by very long and curious pod-like seed vessels. This tree has been planted very extensively in the Western States, both as wind-breaks and for economic purposes, and being a rapid grower and very hardy it has endured severe vicissitudes of climate and given remarkable satisfaction. The durability of the wood makes it valuable for fence-posts and for furniture. As an ornamental tree it has few equals; it has, as far as I know, proved hardy wherever it has been tried in Ontario, and deserves to be better known throughout the length and breadth of our Province. Several years ago your directors secured some fifty or more varieties of hardy Russian apples with the view of propagating them, in order that they might be tested in some of the colder sections of our Province where the better sorts of apples have failed. These are now ready for distribution, and will be sent out as yearling trees to such members as may desire them. Few, if any, of these are likely to prove equal in quality to the best apples now in general cultivation, but we believe they will be most acceptable to the settlers who have made their homes in those portions of our Province where the cold is most severe. As alternatives, members will have the privilege of selecting a bush of that excellent new red currant, Fay's Prolific, a double Dahlia root, or three packages of flower seeds. When one considers the many advantages of membership in our Association, where members really get about \$3 worth of the most valuable material for the \$1 paid as membership fee, it seems strange that so many are content to remain outside the fold.

Fears have often been expressed that with the ever-increasing area of land devoted to fruit-culture our markets would before long be overstocked, and the business become unprofitable. I can clearly recall the first appearance of home-grown cultivated strawberries in the market at London, and the confident predictions made by the wise ones that it would never pay to cultivate these larger strawberries where wild ones could be had for the picking; besides, it was urged that the market would soon be overstocked, and what then would these enterprising enthusiasts do with their products? At that time a few quarts sufficed to supply the demand which it now takes hundreds of bushels to meet. Experience has conclusively shown that the public taste for fruit keeps pace with the increased production; these desirable products are now almost constant articles of diet, and their healthfulness is universally conceded. Those who closely study the rates of mortality tell us that within the past twenty years the average of human life has been materially lengthened, and, while this may be largely due to improved sanitary conditions, there is little doubt but that the healthy addition to our diet of a larger proportion of fruit has also been an important element in bringing about this desirable result.



In my address last year I referred at some length to the fruits of the colder portions of northern Europe, to the probability that many of the better sorts would be extremely valuable to us, and expressed the hope that before another twelve months we should have growing in our Province many of the better varieties of cherry, plum, pear and apple for which that district is noted. These hopes have been realized. Three packages of trees, shrubs and grafts have been received from northern Russia, and, notwithstanding the difficulties attending their preservation during so long a journey, a considerable proportion have been saved, among them the celebrated Vladimir cherry. Besides the fruits, we have secured a number of hardy ornamental trees and shrubs, some of which will, we trust, prove valuable. During the year Mr. Charles Gibb, of Abbotsford, has published much valuable information in the report of the Montreal Horticultural Society on the Russian apples. A large number of varieties are described, and many knotty points in nomenclature unravelled.

The fruit grower has not been without his trials and disappointments during the past season. Fruit trees and vines in most localities passed the winter well, and the spring opened with the promise of abundant crops, but on the 28th and 29th of May severe frosts occurred, the thermometer going as low as 27° in our neighbourhood, and this just at the time when the apples and early strawberries were in blossom, and the young foliage of the grapevines well expanded. The grape crop was almost entirely destroyed, the early strawberries greatly injured, and the apple crop partially destroyed. Notwithstanding this injury the later strawberries yielded well, and the apple crop has been better than for the past two years, while the crop of raspberries has been very abundant.

I propose on the present occasion to call your special attention to a few of the small fruits. Wonderful advancement has been made in some of these during the past few years, a large number of new varieties have been added to the lists, many of them of excellent quality, some of which are earlier, and others later than the older sorts, thus materially extending the season for these fruits, which is a point of very great importance. To briefly review the progress thus made, and to indicate the varieties most in favour at the present time, as well as the most promising of the more recent introductions, will not, I trust, be unprofitable. There are no fruits which can be so extensively and profitably grown in this country as the small fruits. Being comparatively low in stature they are so protected in the colder regions in winter by nature's mantle of snow that in many of the very coldest sections, where deep snow prevails throughout the entire season, some of the tenderest sorts, especially of raspberries, succeed well—varieties which are grown with difficulty in the most temperate parts of Ontario. Where these favourable conditions do not obtain most of the small fruits may be easily protected; hence there is scarcely any location where they cannot be successfully cultivated. Further, there are no fruits which make such prompt returns. Strawberries planted in the spring and properly cared for yield a full crop the following season; raspberries and blackberries, a partial crop, with a full crop the second year; currants and gooseberries, also, if the bushes are two years old when planted, usually come well into bearing the second year after planting. In consequence of these prompt returns and the almost universal adaptability of the fruits referred to, it is reasonable to expect that the interest manifested in their cultivation will be a constantly increasing one, indeed it is difficult to estimate the advancement which will probably be made in this department during the next decade.

In order to arrive at correct conclusions on many of the points presented, I have taken occasion during the past summer to visit a number of our prominent fruit growers, and have thus had the opportunity of seeing many of the varieties referred to in fruit, and of judging of their merits. I have also had the advantage of the opinions and counsel of others which the limited time at my disposal would not permit me to visit. In this way I have the pleasure of presenting not only my own opinions, but in some measure jointly, those of such men as D. W. Beadle, Edward Morris, P. C. Dempsey, A. M. Smith, John Little, W. W. Hilborn, T. C. Robinson, E. Morden, F. Biggar and others, and if there is safety in a multitude of counsellors I shall hope to present to you, as the result of my investigations, conclusions which it will be safe at least for the present to follow.

---

 STRAWBERRIES.
 

---

The strawberry, being the earliest fruit of the season, will first claim our attention. The cultivated varieties so deservedly popular in America are believed to be the progeny of crosses between the *Fragaria Grandiflora* of South America with our native *Fragaria Virginiana*, while the European sorts are said to have their origin in a similar manner from crosses between *Fragaria Chilensis*, of South America, and *Fragaria Vesca*, of Europe. The *Chilensis* has light-coloured fruit and is less hardy, and the effect of this is seen in the general lighter colour of the progeny, and their inability to endure well the cold of our severe winters. As far as can be ascertained, the first of the American hybrids was Hovey's seedling, a variety which made its appearance in 1834, just fifty years ago. It held a prominent place in the estimation of strawberry growers for a very long period, and is still cultivated to some extent. Strawberries are divided into two classes, the pistillate and the hermaphrodite. The pistillate forms have the female organs in the flower well developed, while the pollen-bearing male organs are imperfect. Those known as hermaphrodites have perfect blossoms, in which both male and female organs are fully developed. In planting strawberries it is necessary to bear in mind this distinction, for, should a plantation be made of all pistillate forms the crop will be a failure; in such case all that is necessary to secure fruitfulness is to plant a row of one of the pollen-bearing varieties between every third or fourth row of the others, when the busy bees and other insects will carry the pollen from flower to flower until the whole are fertilized. I have enquired into the merits of more than sixty varieties of strawberries, all of which have been or are being tested in our Province; but I do not propose to weary you with a description of each, but to refer briefly to the leading sorts grown, adding those among the newer ones which seem to be of special promise.

*Crescent*.—This is a pistillate variety, a vigorous grower and hardy, and is said to be the most productive of any strawberry grown. The berry when ripe is bright scarlet, and it colours on all sides equally, so that all red berries can be picked. In size it is medium to large. It begins to ripen with the earliest and continues to fruit for a long period. Although the flesh is somewhat soft, the berries are firm enough to bear shipping to a near market. In quality it is much the same as Wilson; acid and not high flavoured; succeeds well on both sandy and clay soils.

*Wilson*.—This is an old variety, with perfect flowers, very hardy, vigorous and productive, being medium to large, dark red, acid. When fully ripe it is of very fair quality, but it seems to require high cultivation to keep up its fertility.

*Manchester*.—A pistillate variety of recent introduction, a vigorous grower and very productive. Fruit of large size, regular form, bright red colour, firm in texture, and of good quality; adapts itself to all soils, and is very valuable for home use or market; season, medium to late.

*Daniel Boone*.—This is another of the lately introduced sorts, having imperfect flowers. The plant is a vigorous grower, with excellent foliage; fruit large, of a clear red, firm in texture and of good quality; season medium; grows well either in sandy loam or clay; one of the most profitable varieties in cultivation.

*James Vick*.—There is some difference of opinion as to the relative value of this variety, but the general feeling among strawberry growers in Ontario is in its favour. In size it is generally smaller than Wilson, the berries are very uniform, and so many ripen at once that they are easily picked. It is very productive, the fruiting stems being sturdy and upright, bearing the fruit well up above the leaves; ripens late. It is strongly recommended by many growers as a good market sort.

*Mrs. Garfield*.—This is a seedling of *Crescent* of recent introduction. Grown on a rich clay loam it succeeds well and is very productive. The fruit is large, of regular form, bright glossy red, with a firm flesh and high flavour. On sandy soil this variety does not always give satisfaction; ripens early.

*Golden Defiance*.—A pistillate variety of much merit. The plant is vigorous and very productive. Fruit medium to large, regular in form, of a crimson red colour with golden seeds; flesh moderately firm, but not firm enough to carry well to distant markets;

of delicate texture and good flavour ; sweet, with sufficient acid to make it sprightly ; season, medium to late.

*Cumberland.*—This is a large and handsome berry, regular and uniform in outline, of a light red colour, and agreeable flavour. It is too soft for shipping long distances, but valuable for home use and a near market. In some localities it proves vigorous and productive ; in others the crop is said to be variable.

*Bidwell.*—In size and flavour of fruit this berry ranks among the best. It is conical in form, occasionally flattened, of a bright glossy crimson colour, assuming a darker hue as it becomes fully ripe ; the flesh is moderately firm, a red colour, juicy and sub-acid. The plants are usually vigorous and productive, but in some sections the crop is not so reliable ; a variety held in high esteem by most cultivators ; berries sometimes green at the tip when otherwise ripe.

*Captain Jack.*—Grown on a rich clay loam this strawberry is said to be very productive, and having perfect blossoms, which produce an abundance of pollen, it is a good sort to plant between the rows of Crescent, Manchester, or Daniel Boone. It produces a good-sized berry, firm in flesh and of fair quality. On suitable soil this is a profitable late market sort, but it seldom does well on sandy soil.

*Kentucky.*—A large roundish conical berry of fair quality, of a dark red colour and firm texture, which ripens late and succeeds best on sandy loam. It has perfect flowers, is very vigorous and productive, and stands shipping well.

*Arnold's Pride.*—A seedling of the late Charles Arnold's, being very large, bright red and of good flavour ; ripens late ; a good variety, but one which requires rich soil to bring it to perfection.

In addition to the twelve varieties described, there are many other good sorts among the older varieties, and some which are very promising among the newer ones. Sharpless is still much cultivated ; the berry is large, irregular in form and of good quality, but is often green at the tip when otherwise ripe. Mount Vernon is a good late strawberry, which is very productive on clay soil. Early Canada is of value in some sections as an early market berry, provided it escapes spring frosts. Maggie and Bright Ida, two of the late Charles Arnold's seedlings, have succeeded well in many locations. Piper's Seedling, Duncan, Longfellow, Cinderella, Mary Fletcher, Shirts, Seneca Queen, Legal Tender, Lacon, Atlantic and Grand Duke are all deserving of favourable mention. Among the newest varieties, Cornelia and Prince of Berries are especially promising. Cornelia is a very late berry, of large size and good quality, and very productive. Prince of Berries is a strong grower on either sandy or clay loam, producing large berries of fine form, good colour and very superior flavour.

## RASPBERRIES.

In this department also some of the newer varieties, on account of their greater merits, are fast crowding out the older sorts. A few years ago the praises of the Philadelphia were heard on all sides ; now it is in the background, and stands a fair chance, notwithstanding its many good qualities, of being to a great extent superseded. In addition to the red raspberries we have the cap varieties, black, yellow and dark red, a numerous family.

*Cuthbert, or Queen of the Market.*—Among the red raspberries none are more highly esteemed than this. The plant is hardy, a strong grower, and an abundant bearer ; fruit large, conical, with a bright colour and good flavour, and firm enough to market well ; season, medium to late. Occasionally in severe winters the canes are injured in some localities at the tips.

*Turner.*—This is one of the hardiest of raspberries, a vigorous grower, with large foliage, and is very productive. The fruit is of medium size, bright colour, moderately firm, juicy, sweet and high flavoured, ripening a few days earlier than Cuthbert. The plants throw up suckers very freely, which must be cut off with the hoe in order to secure good crops of fruit.

*Philadelphia.*—An old and well tested variety ; an immense bearer ; berries smaller and inferior in quality to either of the last two named.



*Highland Hardy*.—Valuable chiefly for its earliness ; is a poor grower, but a good bearer ; berries medium in size, of a bright colour and good flavour, but soft in texture.

*Delaware*.—Hardy ; a strong grower and good bearer ; about the size of *Turner* ; sweet and high flavoured, but too soft for shipping. *Reliance* also is said to have excellent qualities, which entitle it to rank among the best.

*Shaffer's Colossal*.—This is a dark red or purple fruit, belonging to the cap varieties ; of large size, with a sprightly sub-acid flavour ; not attractive as a market fruit on account of its dull color, but excellent for canning. The plant is an enormous grower and a profuse bearer ; season, medium to late.

*Caroline*.—A yellow cap variety, with an orange tint and good flavour ; size, medium to large ; texture, soft ; a strong grower, hardy and prolific.

*Mammoth Cluster*.—A black cap ; a vigorous grower and good bearer, hardy ; fruit of large size, sweet and of good quality ; one of the best.

*Gregg*.—A later variety than *Mammoth Cluster* ; a strong grower and very prolific. Berries large, but not very juicy ; has proved tender in some sections of our Province.

*Hopkins, Tyler and Souhegan* are three black caps which ripen about the same time, and resemble each other closely. They are all of fair quality, are good croppers and hardy.

*Ohio*.—Also a black cap of fair size and quality ; a vigorous grower and good bearer ; hardy.

*Hilborn*.—A seedling of W. W. Hilborn's, of Arkona, Ont. ; of good quality ; ripens a week earlier than *Mammoth Cluster* ; a good cropper, hardy. Not yet disseminated.

I must not weary you with further details. In this hasty sketch I have scarcely been able to do justice to the many beautiful varieties which grace our tables and gratify our palates during the summer months. The lists of strawberries and raspberries given are not by any means exhaustive, but include the most esteemed of the varieties in general cultivation. There are other good sorts, but they are believed to possess fewer points of excellence than those I have named. A list of this character will need frequent revision to keep it up to the times, for the reason that new claimants for public favour are constantly appearing, combining points of excellence which entitle them to take rank with the best, and what the progress may be in future in this line no one can predict. Could any person have foretold fifty years ago the existing state of things his story would have appeared as strange and unreal as a fairy tale. We cannot fully appreciate the marvellousness of the change, for it has grown on us gradually, and the effects of one surprise have partially worn away before the next one has presented itself. How noble and benevolent a work is ours to be permitted to aid in any small way in introducing or originating varieties which shall enlarge the area of fruit culture, and add to the pleasures and benefits which this beautiful world thus confers on mankind !

What a potency there is in nature's germs ! What possibilities are locked up within the compass of a single seed, say of a strawberry or raspberry ! New points of excellence lie latent there, only waiting favourable opportunity for development. And how profuse and lavish is nature in the production of such germs ! Millions of strawberry seeds are wasted where one is germinated ; what possibilities must be sacrificed among the millions which thus perish ? Fortunately the tendency of nature is to repeat herself, and the losses of the past are thus often among the possibilities of the present. Did time permit me to sketch the progress which has been made in all the departments of this interesting field, you would see more fully the advantages we are privileged to enjoy as compared with those of past generations. To man has been entrusted the care of all the beautiful forms of animal and vegetable life, and he should be especially concerned with those which contribute to the supply of his immediate wants. Man is in some sense responsible for the maintenance of the high standard of quality and productiveness which nature presents when a new form is first unfolded to him. I have already referred to the tendency there is in nature to repeat herself, but the conditions must be favourable or deterioration will sooner or later occur. There is in this respect a similarity between the animal and vegetable world, but the bad effects of ill treatment are not always so promptly seen in the latter as in the former. What breed of stock would long sustain its good points if the smallest and poorest animals were regularly selected for propagation ? Yet farmers and others often use their smallest potatoes—which are worthless for most other purposes—for



seed. Is it any wonder when such a course is long persevered in that varieties die out? Where are the Pink Eyes and Peach Blows which were so much esteemed by our fathers? They have disappeared; given place to the Early Rose and Climax; and these in turn have become in many instances uncertain croppers, and have been partially replaced by the Beauty of Hebron and others. No stock-raiser would expect to raise good stock if the animals were neglected and insufficiently fed in their youth. Strawberries and raspberries sometimes fail to give those returns which the grower expects. In such cases it would be well to enquire whether the young plants when obtained were in that healthy condition necessary to robust growth; also, whether they have since been reasonably well fed. To produce good growth and maintain the vitality of plants which fruit so abundantly you must feed with a liberal hand, supplying to the soil those elements of nutrition most required. If this is done there will rarely be disappointment, for the gifts of nature are bestowed by a bountiful giver who has promised that seed time and harvest shall not fail.

---

## REPORT OF COMMITTEE TO WHOM THE PRESIDENT'S ADDRESS WAS REFERRED.

*To the Fruit Growers' Association of Ontario:*

The Committee to whom was referred the President's address beg leave to report that they consider this address well deserving of the warmest thanks of your Association on account of its general interest, and more particularly of its several features of special value. Among the latter your Committee would call attention to the interesting *resumé* given by the President of the history of the Association. The facts therein stated are, many of them, new to the younger members, and it is highly proper that they should be placed on record among the papers of your Society.

We also feel that the favourable references made by the President to the long and valuable services of your Secretary-Treasurer are thoroughly merited, and we trust the Society may for many years to come enjoy the services of this efficient officer.

Among the special features of value of the President's address your Committee also desire to commend the references to apples and small fruits. No greater boon can be conferred upon our members than the expressed opinion of such men as your President, deliberately and carefully formed after visiting the grounds of, and conversing with, experienced fruit growers, on the most valuable varieties of such fruits and on the nature of the soils and climate required to bring them to perfection. We here have in a few words from a capable and reliable source an opinion which would require the expenditure of much time and money to obtain in any other way; and your Committee hope that such opinions will be freely expressed from year to year in all future annual addresses from your President and his successors in office.

We think also the short reference to the plants for distribution a good feature in the address, as an aid to the members in making these selections, and we hope this also will become a "feature" in the President's annual address.

In concluding, your Committee would recommend the publication of the address at as early a date as practicable, in order that all the members may avail themselves of the observations upon small fruits and plants for distribution, without the loss of another season.

All of which is respectfully submitted.

WILLIAM ROY, Chairman.

J. C. MORGAN,

CHARLES DRURY.

BARRIE, October 21st, 1884.

## REPORT OF DISCUSSIONS AT THE ANNUAL MEETING.

The annual meeting of the Fruit Growers' Association of Ontario was held in the council chamber of the Town of Barrie, on Wednesday and Thursday, October 1 and 2, 1884.

At 10 a.m. on Wednesday, October 1st, the President, Mr. William Saunders, took the chair and called the meeting to order.

The Minutes of the last annual meeting were read and confirmed.

### NEW VARIETIES OF STRAWBERRIES.

The first subject for discussion was "the most desirable new varieties of strawberries, and their particular merits."

Mr. JOHN LITTLE, of Fish Creek, introduced the subject by reading the following paper:

#### A FEW THOUGHTS ON THE STRAWBERRY, ITS CULTURE AND VARIETIES, AND WHAT HORTICULTURE DOES FOR THE COMMUNITY AT LARGE.

According to the programme mentioned in the September Horticulturist it will be the pleasing duty of this meeting to discuss the varieties and merits of this delicious fruit, the strawberry. We will, in treating of this fruit, consider varieties as nearly as may be in the order of their ripening; remarking, however, that owing to the exceptional character of the season their several periods of ripening will be likely to vary in other seasons. The Crescent, as usual, heads the list, both for earliness and as a fruiter. None can compare with it. The colour is beautiful, and it is firm enough to carry to a not too distant market. The Phelps, or Old Ironglad, maintains the claims made for it as to earliness; in form, size, colour, quality and firmness it resembles the Wilson, but ripens much earlier, and the plant is a most rampant grower. This is the most desirable general purpose early sort I have yet fruited, and a profitable kind for market.

Mr. DEMPSEY.—Is the Phelps earlier than the Crescent?

Mr. LITTLE.—No, it comes in just about the same time, but it is a superior berry. The Mrs. Garfield, a Crawford seedling, after five years' test on my place still maintains its reputation for size, quality and appearance. Robert Johnston in his fruit notes expresses regret that it was sent forth as an early berry; he says it is a medium berry, and one of the very finest either for the amateur or for market. The Daniel Boone I have had for the same length of time, and it is still all I claim for it—the plant, a large healthy grower, and the fruit large and beautiful, and plenty of it. This berry belonged to A. B. Webb, of Kentucky. I have picked thirty berries of the Daniel Boone that heaped up a Disboro quart, which is equal to the imperial measure. I have the Manchester, the Jersey Queen and the Big Bob. People talk about pistillate strawberries that will not produce fruit unless they have something of the staminate nature beside them that will cause them to fructify; but these three I planted near a row of apple trees, forty rods or more from any other strawberries, and they produced as good fruit as when they were planted among the Wilson, or Captain Jack, or some other berries. I maintain that there is hardly a berry but will produce fruit if the season is favourable. The Manchester has proved of great value on our place; the plant is large and vigorous, and bears enormous crops of large, fine-shaped berries. The gentleman who sent forth the Big Bob has a very glib tongue, I can tell you; he can even make the black appear to be white, and he condemned the Manchester and told the world that it was nothing but the Old Hovey. Time has proven that it is not the Hovey at all, and he had honour and honesty enough in his July paper to acknowledge that he was mistaken, and I give him

credit for it. It is a magnificent grower, a bountiful bearer of berries that will satisfy the most fastidious taste, and will ship well for a great many miles. The next is the Lacon; the time of ripening is medium; it is a splendid plant, as firm as the Wilson, larger, and more productive, but the flavour is no better than that of the Wilson. The Atlantic, which comes from the home of the Manchester, is a vigorous, healthy plant, and a good bearer of medium to large berries of good quality. The Cornelia is the next variety I will refer to. It is the latest of all strawberries. One gentleman, Mr. J. T. Lovell, of New Jersey, wants five dollars a dozen for it. I give you what he says about it, as he saw it on the originator's grounds in Ohio, fruiting in a most severe drought: "It surpassed, I thought, anything in the way of strawberries that ever came under my observation. A basket of fruit which I took with me to the Nurserymen's Convention at Chicago elicited the warmest commendation from all who examined it." The testimony of Mr. Purdy in the *Fruit Recorder*, is: "We have received from Mr. Crawford, of Ohio, two baskets of his new strawberry, the Cornelia, on the 20th of July—one basket picked on the 17th, and the other on the 18th. They are monsters, running from five to eight inches in circumference; colour, dark and scarlet; berry, meaty, juicy, luscious; coming through in two of the hottest days of the season, shows them to be good shippers." That is the latest and largest berry in cultivation; I have fruited it for five years and I am not ashamed to stand by that test.

Mr. GOLDIE.—How is it flavoured?

Mr. LITTLE.—The flavour is passable, nothing extra; but you know that in going to market, the large, well coloured fruit is the one that commands the price. The Sucker State is a rank, healthy grower, large and uniform, and a heavy yielder. The Connecticut Queen has a plant equal to the Sharpless, is prolific and very late, the berries are large, firm, of good form and extra high quality. The Prince of Berries is a strong, vigorous plant, which produces large excellent berries, but like all of Mr. Durand's seedlings it requires such high culture that but few can give what it demands in order to succeed.

Mr. BEADLE.—Mr. Wilder says of it in the September Horticulturist that it is "handsome, productive and of high flavour."

Mr. LITTLE.—Mr. Durand's specimen beds are five or six feet deep, and consist of material that is fit to grow mushrooms. The berry, however, is a very good grower.

The PRESIDENT.—Is it prolific?

Mr. LITTLE.—I cannot tell you that. I have not fruited it enough yet. The last variety which I have noted is the Legal Tender, a vigorous grower, and productive, but the fruit is not large.

Having concluded his remarks on the new varieties, Mr. Little exhibited a collection of strawberry plants, embracing fifty-two varieties, which he proceeded to describe in some detail, distributing the plants at the same time among the members present. Here, he said, is a seedling, which, when it comes out will be called the Pennsylvania—an American seedling.

Mr. BUCKE.—What are the accounts of it?

Mr. LITTLE.—It is said to be very prolific and to produce large berries, and to be on the medium side. Here is the Pawtuxet, one of the most beautiful berries for flavour that you can find. Here is a plant which was sent to me by Mr. Ryan, of Michigan, the Cetaweyo, and it was the only one of my plants that escaped the frost last spring. Here is the Grand Duke, which was originated by Mr. Adams, of Massachusetts, from whom I obtained a hundred plants. Its quality is good. The James Vick was first sent to me by Mr. Green as the Moonstone, but when he found he could make something out of it by changing its name to James Vick he did so. If you plant it in matted rows, and take care of it, you will get a berry that will ship from here to Montreal and back. The Seneca Queen is a very fine plant, and the berries are beautiful and delicious, and will ship far enough. The Mount Vernon I need hardly tell you anything about; no man need be afraid to plant it either for market or for home use; it matures its fruit very rapidly, and every berry ripens.

The PRESIDENT.—What is the quality of the berry?

Mr. LITTLE.—Middling only; but anything that is "eyeable" will sell in the market. The Black Giant is next to the Pawtuxet for flavour. I have also the Primo.



Mr. BEADLE.—Mr. Wilder says that the Primo is “large, uniform, late, very good and prolific.”

Mr. LITTLE.—When I first tried to get the Park Beauty I got the Crescent Seedling instead; but they are not the same. I fruited the Park Beauty last year, and it is a different berry from the Crescent altogether. No one need be afraid to plant it for market or anything else. The Continental will come about as early as any other variety, and will give you as many berries. The Countess is pretty much like the Mount Vernon.

Mr. A. M. SMITH.—Have you the New Dominion or the Old Dominion?

Mr. LITTLE.—I have neither the New nor the Old Dominion, nor the Early Canada; but I give the man credit who sent them out. The Cumberland Triumph is a large handsome berry. The Monarch of the West has one fault, but a dozen on a saucer will nearly fill it, and if you put cream and sugar on the berries you will hide its fault. The Norman is another seedling of Mr. Crawford's, and everything that comes from him is just like himself; he is a man, every inch of him, and is truthful to the backbone. The Norman is medium, productive, but the size of the berries makes up for the lack of numbers, and the quality of the fruit is first-rate; it is medium in the ripening. The Oliver Goldsmith is a good sized berry, but only a middling bearer; its quality is all that is desirable. Here is a berry that there is nothing like in this world,—the Wilson's Albany; but you will take that remark with a grain of allowance, for some berries which I have given to gentlemen in this room are twenty per cent. better than the Wilson ever was in its best days; still, I would recommend the Wilson yet. The Vineland Seedling is a very good berry. The Mary Fletcher Mr. Wilson likes very well.

Mr. BEADLE.—Did it not come from Nova Scotia?

Mr. LITTLE.—Yes. A good many claim that it came from Mr. Arnold, but Mr. Arnold got it from Nova Scotia. Here is another—the Howell. I have not fruited it yet, but Mr. Johnston has fruited it and speaks highly of it. The Indiana is a very fine plant. I cannot speak of its bearing qualities, as I have not fruited it yet; but Mr. Johnston, who has, speaks highly of it also. Another plant which I have fruited for the first time this year, and which I think very highly of, is the Bell, which was originated by Mr. J. B. Moore, of Massachusetts.

Mr. SMITH.—I exhibited that berry at Trenton some years ago.

Mr. LITTLE.—The Windsor Chief is a very nice berry, but do not pick it in the heat of the day, nor take it to market when it is very warm.

Mr. ROBINSON.—And get somebody else to eat it.

Mr. LITTLE.—Yes. The Jockey Cap I have fruited, but not extensively. It is another seedling which I got from Mr. Johnston, and which he thinks very well of. I should think from what I have seen of it that there is not much in it for a market berry because it is rather soft, but for twenty or thirty miles I think it might do. You all know the Jersey Queen; it is a beautiful berry and a nice grower. You all know the Bidwell also; it is a fine berry, only it has the white end, and it needs cream and sugar. There is not a berry that I know of that I think so much of for size as the Duncan. It is early, and you will have to look after it. The Eureka is medium sized, a good bearer, and of good quality. The Golden Defiance I think Mr. Robinson can tell you about.

Mr. ROBINSON.—I don't think much of it.

Mr. MORGAN.—Would Mr. Little crystallize what he has said to us. What does he consider, we will say, the best six of the newer varieties for market culture?

Mr. LITTLE.—You could not confine me to six varieties of strawberries, because I would be sure to break from such confinement. The Daniel Boone is my favourite.

The PRESIDENT.—I think, perhaps, I could name six in the order in which Mr. Little would choose them—the Daniel Boone, the Crescent, the Cornelia, the Manchester, the Wilson, and the Mrs. Garfield.

Mr. MORGAN.—What does Mr. Little think of the Sharpless?

Mr. LITTLE.—It is not as good a berry now as when it came out. Every variety will degenerate.

The PRESIDENT.—Mr. Little at the beginning of his paper ventured the statement

that pistillate varieties which were at a distance from staminate sorts succeeded very well. I was going to suggest that bees will fly forty rods as well as ten.

MR. LITTLE.—But they will not fly in wet weather ; and how long will it be from the time the plants bloom until they are past fructifying ?

THE PRESIDENT.—I suppose three days. Is it your belief that every strawberry plant has a certain number of stamens which will fructify its own fruit ?

MR. LITTLE.—Yes.

MR. MORGAN.—I think that can be proven by microscopic examination. I think it is very rare to find a pure pistillate berry.

MR. ROBINSON.—There is a difference in these pistillate varieties. Some have more pistils than others. The Crescent has more than any other.

MR. MORGAN.—And the Windsor Chief the least.

THE PRESIDENT.—Perhaps Mr. Robinson will give us his opinion of some of these new varieties. We are very much favoured in having both Mr. Robinson and Mr. Little here to-day.

MR. ROBINSON.—I scarcely know where to begin. I like the Lacon very much ; I find it perhaps the best grower of any I have tried. It is a very good sized berry, considerably above the average ; though I cannot say how it will continue to keep up its size. It was very sour when I first tasted it this year, but that was during the drought, and singular to say I found it sweetened after a shower of rain. The old plants had been rather cut up to get young stock from them, yet they bore a most incredible lot of berries ; I counted as many as twenty-three fruit stems on one plant. I have fruited the Daniel Boone ; it is a large berry, and it seems to be hardy and a good grower. The Mrs Garfield I like very much ; the quality is good, and the berry is very smooth and large, and presents a handsome appearance, but it did not do well on my soil, which contained very little clay ; but I have it now on different soil where there is more clay, and I hope it will do better.

THE PRESIDENT.—Have you fruited the Cornelia ?

MR. ROBINSON.—No ; I have it growing on my ground, and it grows very well.

MR. BUCKE.—How does the Manchester succeed ?

MR. ROBINSON.—I find it a great bearer, very regular and uniform, and quite large. I grow my berries only on the hill system, and I have picked as much as a pint to the plant on a small patch. The James Vick is a good bearer, though I find some of the berries are small. On the whole I think it worth further trial. It is a good grower and a good shipper ; the only thing I have any doubt about is the size ; but I would not like as yet to recommend it. The Manchester I find differs in quality in some seasons as compared with others. The season before last the Manchester was of excellent quality, superior to the Bidwell ; last year the Bidwell was better ; but this year I like the Manchester better again. I consider the Manchester an exceedingly respectable berry in quality—very much superior to some of the new varieties that come out. The berry which has been most productive with me and given me the most money is the Bidwell. I think I am within the figure in saying that from one patch of a quarter of an acre I got sixty bushels, measuring by the quart boxes. When I pick for the market I use the Canadian box.

THE PRESIDENT.—Have you experienced the difficulty of the green tips ?

MR. ROBINSON.—That is the great drawback of the Bidwell.

THE PRESIDENT.—I heard a gentleman a short time ago say that he liked those berries with the green tips, because they gave him something to chew. Do you find that people object to the green tips ?

MR. ROBINSON.—Yes, they have objected to them at first, but afterwards they have come back for the same berries.

MR. BUCKE.—How does the Sharpless succeed with you ?

MR. ROBINSON.—It does not bear very well. I find that it requires considerable manure, and I do not use much. The Bidwell does well on both clay and sandy soil. The Daniel Boone did not get a fair chance with me, and I cannot speak of it positively as yet. The Mount Vernon I have tried, but I do not think anything of it. It seems to me to be a second edition of the Charles Downing ; it is not firm, not exceedingly productive, and not a very good berry to eat.



Mr. SMITH.—Have you tried any of Arnold's seedlings?

Mr. ROBINSON.—Arnold's Pride is very much like the Sharpless, a fine grower, but I could not get a crop. It is a large berry and it has not that green tip that the Sharpless has. The Maggie I find one of the most productive berries in existence, so far as the blossoms are concerned, but it does not ripen its fruit well. The other two varieties I have tried are the bright Ida and the Alpha. They were very unproductive with me. The berries of the Maggie have not the fine appearance of other berries.

Mr. GOLDIE.—How about the Shirts?

Mr. ROBINSON.—It is a very good berry for home use, but not productive enough for market. It is a berry of high quality, but like all other berries of high quality it requires rich land, or else it will deteriorate in size. The Pride of Berries I like very much. It grows about an inch and a quarter in diameter, it is very firm and very glossy, and its quality I consider the best of any berries I have tested. The Golden Defiance did not give me much of a crop, but it seems to be good for market, owing to its firmness and its fine light color.

Mr. LITTLE.—Mine has not a light colour; it is red, with bright golden seeds.

Mr. ROBINSON.—I think the public prefer a berry of a bright crimson scarlet, and that is the kind of berry we want.

The PRESIDENT.—I would ask Mr. Morgan to give his experience of strawberry growing in this county.

Mr. MORGAN.—It is only about five years since I have been engaged in strawberry growing, and as my object has been simply to grow for market and not for plants I have tested the new varieties only to a very limited extent. It has only been when I have heard of a variety that has made a decided mark as a market variety that I have tried it. My fruit farm is something under twenty acres, situate about a mile from here, and I should be exceedingly glad to provide conveyances for the gentlemen present if they would this afternoon pay my farm a visit. The varieties we have grown for market I shall name in the order in which I prefer them. The Crescent, I consider, easily and decidedly ahead of all others; the Sharpless next, and the Wilson next. After that I would place the Green Prolific, which has done remarkably well with me, though in many places it is not thought much of. The Charles Downing, in the second and the third year, has yielded well; in the first year it seems to grow to leaves instead of producing fruit. The Manchester I have grown, and am exceedingly pleased with it in every respect; its quality is very much superior to that of the Wilson; it is immensely productive, and this last summer, which was an exceeding dry one, the Manchester held its fruit and ripened it to a fair size to the end. I also like the Lacon exceedingly. The James Vick we see very little of. I confess that I have been very much disappointed with the Big Bobs sent to me. We bought two lots at different times; one lot were trash, the others are unaccountably good; but as we have so very few, it is impossible to say what this variety would show in larger quantities. My partner wished me to place the Wilson ahead of the Sharpless. That is because this year, owing to frost or some other cause, the Sharpless did not bear. The blossoms were black, and I found that not only did they not open, but the small buds inside did not open.

Several Members stated that that was owing to frost.

Mr. MORGAN.—That is explicable, then. The blossoms showed the appearance of having been nipped by some insects; this was after the fruit had formed, but under a strong magnifying glass no insect was visible. Strangely, however, the Sharpless was infinitely more affected than any other variety. The Crescent bore its crop; the Crescent was somewhat affected, while the Sharpless crop was absolutely ruined. Last year our whole crop was about 20,000 quarts; this came off about three and a half or four acres, and I think the Sharpless bore an equal weight of fruit with any of the other varieties. We grow in the matted row altogether, and give our plants some care and culture in the way of manuring. The ground was much run out when we first took hold of it, and we gave it heavy mulching with well rotted manure. I forgot to mention the Bidwell, which I would place second before the Sharpless. Last year, however, it was slightly injured by frost—the old plants only. I had a fine patch of the Jersey Queen, and it

was absolutely cleaned off by frost last winter, with the exception of a few young plants. I am strongly in favour of all the varieties that are of low growth, and I also like the foliage to be deeply serrated. There seems to be some connection between low growth, serrating of the leaf and hardness of the plant.

The PRESIDENT.—The varieties you prefer are the Crescent, the Bidwell, the Sharpless, the Wilson, the Green Prolific, the Charles Downing, and the Manchester.

Mr. MORGAN.—I do not like to be considered as preferring the Bidwell to the Charles Downing or the Manchester, for I have not tested them sufficiently yet. My experience so far would lead me to place the Manchester side by side with the Bidwell if it does as well in extensive culture as it has done in small culture. I never knew anything to excel the Charles Downing in my garden, but in the field it does not do as well as the Wilson or the Sharpless or the Crescent.

Mr. BUCKE.—Have you tried the Daniel Boone?

Mr. MORGAN.—I have tried it, but not fruited it. The Jumbo is a magnificent fraud, although other people have described it as a very fine berry. I would like the gentlemen present, some of whom have had five or six times the experience I have had, to express their views with respect to culture for market. My friend Mr. Robinson is strongly in favour of cutting off the runners, while Mr. Little takes the opposite view. It does seem to me that we can grow large quantities for market by cutting off the runners; and I think we must grow with the matted row system. Still, I should like to hear if there is anything better.

Mr. LITTLE.—The only way in which my friend can prove the matter is to try the two systems. With regard to low growing plants, they have generally a short stem, and you cannot get your pickers to gather as many berries from low growing plants as you can from the higher ones.

Mr. DEMPSEY.—With regard to planting in a single row, I am just reminded of my own method of culture. The largest crop of berries I ever harvested from a small piece of land was 12,000 quarts from two acres. We always cultivated in the matted row system, but we always maintained that the rows should be narrow with broad cultivated spaces between them, so that when we grow a single row we have a broad space on each side. I have seen the advantage of that system proved more conclusively this year than ever before. I would advocate the rows being one foot wide, and the spaces between them two and a half or three feet. I have seen some rows three feet wide with only about twelve inches of cultivation between them; and invariably, where that style of cultivation prevailed, there was just a little streak of berries on the outside of the row that were worth picking. Something was said with respect to cutting runners. We do not think that is any trouble at all. We simply sharpen our hoes, and with them clip off the runners where we find them running too much. We just treat them as weeds wherever we find they are not required. We do not sell plants, consequently it is unnecessary for us to allow the runners to grow for plants.

Mr. MORGAN.—You cannot grow both for fruit and for plants very well, I think.

Mr. DEMPSEY.—No, I think not. For cutting the runners we use an implement with a double edge, like knives on each side. It has a flange on the bottom in the form of a letter V, the point of which comes in front. With that we can cut the runners clean to a certain width; but if they have not rooted, they will swing around.

Mr. HUGH SMITH, of Sarnia.—I would like to get some information as to the best manures for strawberries.

Mr. BUCKE.—I think Mr. Dempsey has had some experience of bone dust and ashes.

Mr. DEMPSEY.—I have had the best results from bone superphosphates or bone dust. We used to be able to get it, but lately I have been unable to do so. The makers now seem to mix a little too much of the mineral superphosphates with it, and I think they get that from the roadside or from their fields, so that we have been obliged to cease using it. The best we ever had was what we manufactured ourselves, simply by taking some second-hand pork barrels and hunting up the bones, or getting bone dust which we know is bone dust, and then applying sulphuric acid. When it is dissolved we mix the earth with it to absorb the moisture; and we have had better results from the superphosphates we manufactured in that way than from any we could buy.

Mr. BEADLE.—You dilute the acid?

Mr. DEMPSEY.—Yes, two or three gallons of water to one of acid.

Mr. LITTLE.—About what would be the expense of that manure for an acre?

Mr. DEMPSEY.—Only about fifteen dollars, not so much as stable manure.

Mr. MORGAN.—And do you think it is anything like so good as barnyard manure for strawberries?

Mr. DEMPSEY.—Better with me.

Mr. BEADLE.—Have you had any experience with wood ashes for strawberries?

Mr. DEMPSEY.—Yes, and with good results, particularly on sandy land, or on spots where the plants seem to be growing poorly. By giving such plants a nice dressing of common wood ashes, say at the rate of about ten bushels to the acre, or a little more, we find almost invariably that the plants are restored and grow as vigorously as the rest of the patch. I was talking with a gentleman the other day about fertilizers. He told me he had arranged a potash kettle, and that he gathered all the old bones he could and threw them into the kettle, with alternate layers of ashes, and then he applied water to the surface in order to keep it moist. At the end of two or three months' time, he said, the mixture would become a rotten mass, and then he sowed it on the ground with his hand from a wheelbarrow. He told me he tried it on corn and on some small fruits, and that in every instance it had the effect of producing about a double growth. I thought it was a very valuable piece of information, which I picked up in a few minutes' conversation with a man in Toronto.

Mr. BEADLE.—The small bones will dissolve very readily in the way described by Mr. Dempsey, but you will after all have to pick out some large bones that will not dissolve in three months. However, if you have any way of breaking them up, they will dissolve very rapidly. If you get the bones from a bone mill, you will find that preferable to buying the bone dust, because you cannot very well be cheated; and if you lay the bones in thin layers and sprinkle ashes over them, keeping them damp, at the end of two or three months you will have a fine mass of manure.

Mr. BUCKE.—Soft-wood ashes will not do; I believe you must have hard-wood ashes.

The PRESIDENT.—Soft-wood ashes are deficient in alkali.

Mr. ROY, of Owen Sound.—I keep my barnyard manure until it is two or three years old, and I find it is the very best thing I can get for strawberries.

Mr. LITTLE.—It is all very well if you can get your barnyard manure two or three years old without any clover in it.

#### FRUIT COMMITTEE.

The President nominated the following gentlemen as a committee to examine and report upon the fruits on exhibition:—Messrs. Bucke, Morgan, Judge Boys, Robinson, and Croil.

The association adjourned till two p. m., and on resuming at that hour the first business taken up was the opening of the Question Drawer.

#### TOP GRAFTING.

QUESTION.—By Mr. A. HOOD, of Barrie.—If trees that are best adapted for clay soil are planted in light soil and are not doing well in consequence, would it be advisable to top-graft with a variety which prefers light soil; or if tender varieties are growing in a climate too severe, will they be likely to do better if top-grafted with hardy varieties?

Mr. BEADLE.—The first part of this question concerns something of which I have had very little experience. I do not know that I ever top-grafted a variety that did not do well on sandy soil with one that did well, for the sake of seeing what the effect would be. This question touches the matter of pears more than it does that of apples. Apples are more indifferent to the character of the soil, so far as fruiting is concerned, than pears; the soil makes more difference in the quality of the apple than it does in its fertility, which is also true of pears. There are some varieties of pears, however, that will fruit well on



sandy soil, such as the Buffam, but I cannot recall an instance of any of my neighbors grafting over the Buffam growing on clay soil, because it did not fruit well. But I am satisfied that the Buffam would grow and fruit well, top-grafted into any tree whatever growing upon light soil. I do not know that I can throw any more light upon this question; it is one I have not experimented on. The other part of the question I suppose means, Will the hardy varieties which are top-grafted upon a tree which is somewhat tender, be more likely to bear fruit than the original tree?

Mr. HOOD.—That is it exactly.

Mr. BEADLE.—The short answer to that is to say, yes, it will. To be sure, that answer should be given with a limitation. If the tree is so tender that it kills down to the ground, it is not of much use to graft it. There is an extreme tenderness that will not survive occasional winters at all. But if a tree succeeds in surviving two or three winters, and is top-grafted with a hardy variety, that hardy variety will ripen up its wood and will follow its own peculiar habit, and the trunk upon which it is grafted is less likely to suffer from cold.

Mr. HOOD.—That is my own experience, but I thought I would like to have the opinion of some one who knew more on the subject than I do.

Mr. ROSS.—If that is the result of top-grafting on tender varieties, might not a similar result follow top-grafting on a tree where the soil was not exactly suitable for the tree first planted?

Mr. BEADLE.—It might, but I have not had experience of that; but the other matter has been tested and proved. If the cold is not severe enough to injure the trunk of the tree and make it black in the heart, it can be made to bear fruit. A great many of the apple trees about Guelph are failing in that way, but I have no doubt we are gradually getting a race of apple trees hardy enough to stand the cold without getting black-hearted. I presume the Duchess of Oldenburg will stand, as well as the Tetofsky and some other Russian varieties.

Mr. HUGH SMITH (of Sarnia).—If a tender variety is grafted on a hardy stock, will there be any hardiness imparted to the tender stock?

Mr. BEADLE.—Not the slightest, in my opinion.

Mr. HUGH SMITH.—Because I have grafted peaches on the plum tree, and they appeared to grow when other peaches would not.

Mr. BEADLE.—That was not because the grafting of the peaches on the plum made them hardier, but because the plum tree ripens its wood earlier than the peach. The action of the plum root compelled the wood of the peach to ripen earlier than it otherwise would have done, and in that way indirectly it did make it somewhat hardier. The tendency of the plum is to cease growing very early in the season, and so it tends to stop the growing of the peach, and to compel the leaves to fall off before the frost is strong enough to injure the peach wood. With us the peach trees go on growing until November, but sometimes there will be six or eight inches of tender growth that has not ripened up at all. I have seen some of them completely killed by the autumn frosts, because the growth was not checked by the cold autumn nights of October, which are usually alternated with warm days. You will get a hardy race of peaches in this part of the country by the process of raising your own peach trees from seed. If you can get a peach tree to ripen its fruit here and plant its pits, they will become somewhat acclimated. Go on planting the pits from the trees thus produced for two or three generations, and you will get a hardier race of peach trees than you can obtain by any other means. I have tried that plan with other trees in St. Catharines; for instance, with some ornamental trees from China. The first I tried was the Chinese *Arborvitæ*. It died back every winter for a time, and came very near being killed; the tree became stunted and lost large quantities of its branches, but finally it made fruit and bore its seeds. I took those seeds and planted them. I was then but a lad in my teens. They came up. After these trees had grown to be a foot high in the seed bed, I took them out and planted them at different places in the garden. These trees were hardy. The mother-tree has been dead for years, and I have a race of those trees that stand our winter perfectly, and they bear fruit every year or every other year. Since then I have experimented in the same way with other ornamental trees with success, and I believe if

you can only get a peach tree to ripen its fruit here, and plant its pits, and keep on doing that, you will get a peach tree that will succeed in your climate in bearing fruit.

### MULCHING.

The next question taken up for discussion was, "The benefits of mulching in summer and winter and the most suitable material."

Mr. A. HOOD, of Barrie, introduced the subject by reading the following paper :

#### IS MULCHING BENEFICIAL ?

Mulches are applied in winter to assist in keeping out frost, and to prevent snow from being blown off; they are continued in spring to prevent the surface soil from alternately thawing and freezing, and by retaining the frost about the roots prevent too early a development of buds and blossoms; but their principal use is perhaps to prevent a too rapid evaporation in hot weather and during drought, and thereby preserve for the use of trees, plants and vegetables the moisture that is in the soil, and to retain for a longer period than is otherwise possible such as fall from the clouds; incidentally they may to a certain extent prevent the growth of weeds, and thus save labour in hoeing. There are, however, certain other resulting effects to be taken into account which may be prejudicial; in fact, like all debateable questions, there are two sides of the case to be considered. In the first place, if mulching prevents rapid evaporation, it also prevents anything but very heavy rain from reaching the surface of the soil; for the mulch receives and absorbs the principal part of the rain that falls, which is thereafter soon evaporated and returned to the atmosphere without ever touching the soil, and thus the roots of plants are deprived of fresh water, and also of the nitrogen and other elements that rain water always contains. This is a very serious objection, and another result arising from the same cause is, perhaps, equally serious, and that is that the soil and roots beneath a mulch are totally deprived of the moisture which would otherwise be deposited in the form of dew; a deposit which I am inclined to regard as almost equally as valuable as the rainfall, for by this agent plants are, during a drought, not only kept living, but in a flourishing condition, providing the soil around them is kept loose so that the air and the dew can penetrate.

The practice of mulching would indeed require to confer some very great benefits to overcome such serious objections as the deprivation of two such important sources of nourishment; cutting off the supply of the very elements it aims at preserving. What benefit would it be to an individual to have his landlord bank up his house and put double glass in the windows to keep him warm, if, at the same time, he stopped the supply from the pump and closed up the cistern?

Mulch, while preventing rapid evaporation, of course excludes the rays of the sun, and keeps the soil in which the roots are growing much cooler than it otherwise would be. This is, perhaps, beneficial to some kinds of vegetation, but it may be injurious to others.

It is natural for the roots of plants to penetrate a certain depth below the surface, which varies with the nature of the soil and the cultivation. The more loose and open the surface is kept the deeper will the roots be found, and *vice versa*. This is caused by the fact that in preparing food for the growth of the plants certain chemical processes take place to effect which the presence of atmospheric air is necessary. Roots, therefore, will not descend so deep as to be out of the reach of this necessary element. It may be inferred therefore that if the roots of a tree are established in the soil at the proper depth the addition of a heavy mulch will, by partly excluding the atmosphere, disturb the equilibrium heretofore existing, and thus in some measure injure the health of the tree. If the tree is young and the roots have not become established the tendency will be to draw them nearer the surface in search of air than they would be drawn if left to themselves, thus rendering them more liable to suffer in a drought and more likely to be injured by frost, should the mulch ever be removed; which makes it almost imperative, therefore, that when mulching is once commenced it must be continued.

If from three to six inches of fresh soil was applied instead of a straw or manure



mulch, and kept continually stirred or cultivated so that roots would not be allowed to establish themselves, would not all the benefits of a vegetable mulch be obtained without its disadvantages? And, if the original soil had been constantly cultivated instead of applying the three or six inches of fresh soil upon the surface, would not the same result have been secured? If so it would seem to demonstrate that cultivation is better than mulching.

If mulch could be applied immediately after the last rainfall that precedes drought; and be removed in time to allow the first succeeding rain to reach the soil, then possibly considerable benefit might be derived; but until our weather offices attain to much greater skill in predicting the future weather than they now possess it will not be possible for cultivators to avail themselves of any advantages that might in that way be secured.

In considering the advantages and disadvantages of the practice of mulching, we are considering the best means of providing against the effect of continued drought; and as that is the object we have in view it may not be out of place to refer to some theoretical ideas which, if they have any foundation in fact, would be interfered with by this same practice of mulching.

I have been in the habit of indulging what perhaps may be considered rather singular ideas on the subject of the supply of moisture to the roots of plants; and yet I feel considerable hesitation in introducing such theories on an occasion like the present, because they may be looked upon as nothing more than a hobby, and because it is not easy to see how they are to be utilized for our benefit even if they should prove to be correct. Still, I think you will admit that if we discover certain principles or modes of operation as applied by nature to promote the growth of vegetation, it would certainly be one step towards applying those principles ourselves for our own benefit, though we may not at present be able to see how it is to be done.

I am led to think then, Mr. Chairman, that plants have means of supplying themselves with moisture independent of what falls from the clouds. I think in fact that some plants, if not all, have the power to a limited extent of converting the elements to be met with in the soil and the atmosphere, or rather combining those elements in the right proportions, to act as their own circulating fluids; that in fact they have the power under certain conditions of making water to supply their own wants.

It is well known that water is composed of two gases, oxygen and hydrogen, that it can be decomposed by means of electricity and resolved into those two elements, and that those two elements may again be united and converted into water.

No element is more abundant than oxygen. The air we breathe and the water we drink contain it in large quantities, as also do all rocks and minerals—clay, sand, quartz, flint, chalk, limestone, marble—in short all the solid constituents of the earth's crust; and hydrogen forms a part of most metals and of everything combustible, and enters largely into the structures of every organized substance, either mineral or vegetable, as well as manufactured articles, such as starch, sugar, vinegar, alcohol, etc. Why, there are materials here sufficient under us, above us, and around us, to furnish water enough for a second deluge; and yet vegetation has been burnt up the past summer for want of it.

The difficulty of separating those two gases from their present combination and reuniting them so as to become water is very great, for hydrogen being the lightest of all gases no sooner becomes free than it ascends to the upper regions and is lost; therefore unless the combination with oxygen takes place at the moment it is disengaged there is no possibility of effecting it. It has occurred to me, however, though the idea may to some of you appear ridiculous, that this power of disengaging these gases and converting them into water is possessed to a limited extent by most plants, and by some of them in a much greater degree than others. I have been led to form this hypothesis by observing phenomena that I could not account for in any other way, and in reading of cases far more remarkable than any I have observed.

I have noticed that some of our plants and flowers possess a power of withstanding the withering effects of a protracted drought much better than others, and these are frequently of a succulent or juicy character. I will not weary you by multiplying instances, but will call your attention to a few that occur to me. I have noticed, then, a very delicate variety of larkspur that the drought of the past summer on the driest of soils

has not been able to kill. I have noticed the difference between cucumbers and tomatoes—both natives of warm climates. The one cannot exist without liberal supplies of water, and the other cannot be killed or much injured in the longest drought or on the poorest soils. I have noticed that when all crops and even weeds are suffering from want of moisture, one weed—the wild portulaca—flourishes amazingly; and the cultivated variety, which Vick's Floral Guide calls "the beautiful little Salamander," will, when everything else is perishing for lack of moisture, give its largest flowers and brightest colours. The Cactus family are remarkable for their power of withstanding drought, growing as they do in a climate that is for a great part of the year almost destitute of water, and being found as they are on arid soils and bare rocks some of them are, notwithstanding all this, represented as containing a store of wholesome juice of which both men and cattle avail themselves. But perhaps the most remarkable of all is a plant not properly a Cactus, but in some respects similar, called the Agave or American Aloe; and another species, the Mexican variety, or Maguey plant, being the same as cultivated in our conservatories under the name of Century plant. The Mexican variety grows to an enormous size, and is cultivated in that country as a hedge plant. The fibres of the leaves are under the name of Maguey used for the manufacture of thread, twine, ropes, etc., but its principal value is for the juice, which yields sugar, and which, when diluted with water and subjected to four or five days' fermentation, becomes an agreeable but intoxicating drink called Pulque, which is the national beverage of the Mexicans. This liquor is obtained by cutting or scooping out a basin in the very heart of the plant, into which a juice called honey-water flows at the rate of from four to eight quarts a day, according to size of plant, and continues to flow, according to our account, for a period of three months whether the weather be wet or dry. Humboldt describes it as flowing for a year to a year and a half, but let which will be the correct account there is something not easily explained in the fact of a plant on arid soil, or on bare rocks in a dry climate, producing from four to eight quarts of juice per day.

If this be as stated, it appears to me that teetotallers may preach up temperance and the people may sign pledges if they choose, but when liquor can be extracted from every hedge plant in such liberal quantities I should suppose there would be considerable difficulty in carrying out effectually any law prohibiting the use, or the abuse, or the manufacture of liquor.

But wonderful as all this may appear, I am not sure but something quite as remarkable may be seen by any of us every season. It must be remembered that the Cactus and the Aloe or Century plant have no pores through which evaporation can take place; they therefore retain all the moisture which their roots collect, whereas our deciduous trees, such as the apple and the pear, are continually evaporating moisture from every leaf. What the amount of this evaporation might be per day from an ordinary sized apple tree I have no means of knowing, but it must be something considerable, to say nothing of the moisture which is supplied to the growing fruit. All this evaporated moisture must be collected by the roots, and it would not tax our intelligence very highly to imagine how it could be done; but imagine an apple tree growing under glass and bearing its load of fruit without one drop of rain ever reaching its roots from spring till fall, and it will then tax your intelligence very considerably to know how the roots procure the moisture necessary for growth and evaporation.

I say without one drop of rain from spring till fall, which, perhaps, some of you may be disposed to doubt; and if so, I would recommend the doubter to make an experiment or two for himself. Take a spade and dig through the sod that is growing under a tree two or three times during the summer, and if he finds at any time, yes, even after a heavy rain, that the sod is moist two inches below the surface, I shall be surprised. Having in this way assured myself of the impossibility of any ordinary rain penetrating through a sod, the wonder with me is not only how the roots manage to supply moisture for growing fruit and evaporation, but how the trees manage to keep themselves alive; and in seeking for an explanation of this mystery I have been led to imagine that some of them at least have the power before referred to, of manufacturing a supply for their own use.

But what has all this to do with mulching? some of you may be led to ask. Why,



simply this, that if there is anything in my theory, mulching has a tendency to interfere with and exclude some important agents in effecting those objects, such as atmospheric air and the rays of the sun.

We have had different plans proposed for supplying vegetation with moisture ; one was to fly a kite with a wire rope and send up a current of electricity to bring down the rain ; but the difficulty was that one current might be coming down the wire while the operator was thinking of sending another up, which would, perhaps, have been attended with disagreeable consequences. Another proposes to send up a charge of dynamite and explode it among the clouds ; but both of these proposals had this difficulty, that if there were no clouds they could bring down no rain. Now, suppose we endeavour to reverse these methods, and instead of looking upwards for moisture let us turn our attention downwards and see what we can extract from Mother Earth. We cannot turn sand and clay into water, but we may assist vegetation in extracting it for themselves. Oxygen is everywhere in abundance. Can we not furnish the hydrogen ? Hydrogen is liberated by the action of sulphuric acid on iron or zinc, and it enters largely into the composition of all animal and vegetable matter. This matter when decomposed becomes manure, and I need not tell you that where this is applied freely crops suffer less from drought than where it is not present. May not the reason be that manure furnishes the hydrogen which enables plants to supply themselves with water ? And if that is not the reason, what is ? for no one, I apprehend, will dispute the fact. Presuming that manure furnishes all other requirements of plant life, if it did not assist in supplying moisture where other sources fail, a healthy growth could not be maintained. If so much is admitted, then comes the question, Can we not supply what is wanted in this particular case in a cheaper, more effective, or more available form than barnyard manure ? And that is a question I shall leave others to answer, for I can give no positive information myself.

As before stated, when some of these metals—iron and zinc particularly—are treated with acid, hydrogen is liberated in large quantities. This has led me to suppose that copperas or blue vitriol might supply what is wanted. Copperas is sulphate of iron, and blue vitriol is sulphate of copper, both being products of these metals when treated with sulphuric acid ; but whether in this form they would be of any use I cannot say. This much there is, however, in their favour, that copperas has already been reported as a remedy for blight in pear trees, and as we know that those trees are not subject to that disease in a moist climate it would seem to indicate that in some way it counteracts the injurious effects of a climate that is often too dry. In mulching I have little faith, and have had but little experience on which to base an opinion, but what little I have had has been unfortunate. I mulched some of my Black Caps the past summer before the fruit began to ripen, and several of the roots died outright, and others all died but the present year's growth, and as this is the first year that I have lost any in that way you will not be surprised at my want of faith, nor that I should look in some other direction for a remedy.

The President requested Mr. H. B. Spotton, of the Barrie Collegiate Institute, to give his views of the theory advanced in Mr. Hood's paper.

MR. SPOTTON.—I would have preferred first to have heard the paper discussed by the practical men of the Association. I may say that the theory advanced by Mr. Hood is a perfectly novel one to me, as I suppose it is to the members present—that is, that plants make water out of the materials of the soil for their own purposes. I am not disposed to give my adhesion to that theory at present. Everyone who knows anything of the structure of plants knows that on the under side of the leaves there are openings into the intercellular spaces, and these have the power of expanding, so that on a dry day the evaporation would be very different in amount from what it would be on a moist day, when the air is saturated with moisture. I do not think the requisite conditions are present in plants for combining oxygen and hydrogen so as to form water in the body of the plant. The supply of nourishment comes to plants in the form of liquid, I believe. Until lately, it was supposed that these openings in the leaves were merely for evaporation, and not for absorption ; but the latest researches of botanists go to show that there is a quantity of oxygen taken into the plants by those passages. It is a very common statement in *Gray's Botany*—perhaps not in late editions—that plants purify the air for

animals—that they inhale carbonic acid gas and exhale oxygen through these stomata in the leaves; but the latest investigations show that a certain amount of oxygen is absorbed through them. With regard to fleshy plants, of course we all know that tropical countries are their homes. The nature of a plant is to adapt itself to the circumstances in which it finds itself. Evaporation through the stomata is absent in these tropical plants, and Mr. Hood's difficulty seems to be as to where they obtain their supply of moisture. In order to account for that he assumes that they manufacture the water within themselves. I do not believe that. I believe they get their supply of moisture from the air. We know that the dew in tropical countries is exceedingly heavy.

A MEMBER.—If they are destitute of pores or stomata, how do they get their moisture?

MR. SPOTTON.—I believe they get it through the roots, and they gradually lay up a large supply. If a small supply is taken in by these plants continuously, and practically none given out, I think that circumstance is sufficient to account for the large quantities of moisture which tropical plants contain. Then, Mr. Hood seems to be troubled by the consideration that if a heavy rain falls, and you dig a few inches beneath the soil, you will find the soil perfectly dry. But I think it is within the experience of all of us—of course I am not speaking as a practical horticulturist, because I know very little indeed of practical horticulture—that if a board is laid on the ground, the effect of it is to retain moisture. If you place a board on the surface of the soil, and after twenty-four hours, you remove it in the morning, you will find the soil at that spot covered with moisture while it is dry all round. The reason of that, I take it, is that the board has prevented evaporation from the soil. What is to prevent the soil acting as a sort of sponge and carrying moisture up from below? I do not believe that all the moisture the soil contains is from the air; my impression is that some comes from below; but so far as my reading and experience and knowledge of plants go I would not be disposed to give my adhesion to Mr. Hood's theory. In order to cause hydrogen and oxygen to combine to form water, a very high degree of heat is required. They can be combined by electricity, but that means a very high degree of temperature.

MR. BEADLE.—A degree of temperature so high as to destroy any species of plant we are acquainted with, I suppose.

MR. SPOTTON.—I should think so.

THE PRESIDENT.—I think there is a great deal in what Mr. Spotton has suggested as to the earth below supplying the water. That is the theory advanced to account for the fertility of the soil in the North-West Territories, that the moisture in the soil, which is there in a frozen state, by thawing out during the summer season keeps up a supply of moisture, and in that way stimulates the growth of plants. I do not suppose that in any place we could find soil dry enough under the sod not to yield a considerable quantity of water if put in a still. It appears difficult to accept Mr. Hood's theory, as it requires such a very large quantity of the necessary gases to form a small quantity of water, and the heat required to produce the change would destroy the tissues of the plant. It does not seem a reasonable theory to my mind, though it is a very ingenious one, to account for the difficulty which Mr. Hood has felt. I do not see any difficulty in the way of roots drawing moisture from the soil from below, or of their absorbing it from the atmosphere when it is saturated with moisture at night. I think I have seen it stated that an ordinary forest tree will give out several hundred pounds of water during twenty-four hours, showing the enormous quantity of moisture required to keep up the supply of a single tree.

MR. BEADLE.—I would like to say a little on Mr. Hood's paper, which is an excellent one in its practical bearing upon the work of the horticulturist. This question of mulching is beset with more difficulties than I think we have been in the habit of giving it credit for. We put on a heavy mulch, and after leaving it for a while we go and rake it away again, which is a very injurious process. If we put on a mulch, as Mr. Hood has said, we must leave it there; and as it disintegrates and gets carried away by the rains, we must keep up the supply in the case of those trees or plants whose roots are largely surface roots—small, fibrous roots that feed near the surface. Grape vines, for instance, will illustrate what I mean. I have seen gentlemen ruin their crops of grapes by putting on



a beautiful mulch in the fall, leaving it on all winter and spring until the fruit has set and then removing it. When the weather begins to get warm they run the cultivator along and tear up this mulch; and after the next heavy rain the soil becomes baked, and the result is that the roots which come to the surface are roasted by the sun or actually dried out by the baking clay soil, and have not moisture enough to sustain life. I have seen grapes wither upon the vine, while the fruit grower wondered what was the matter with his grapes, not knowing that it was his own fault in having changed the condition of the plant. Mr. Hood's idea is quite correct—If you mulch, keep up your mulch the year round, and let the roots grow into that rotting, decaying vegetable matter and feed upon it. If you go into a forest and stir up the leaves on the ground, you will find the roots of the trees and shrubs lying in a network under these leaves, and there is nothing that will destroy a growth of trees like raking these leaves away. On the other hand, if you do not care to mulch, if it is not convenient to do so, by keeping the surface of the soil stirred up as Mr. Hood suggested, keeping it mellow all the time; you will have conditions very much like mulching, and in that you will have an excellent substitute for mulch, and I am inclined, take it all in all, to prefer it to mulching. By keeping the surface of the soil well stirred, you will induce the moisture to rise from below, you will enable the dew and the rains to penetrate to the roots, giving them that nutriment from the ground and the atmosphere which they require. If you keep the ground mellow in that way it will not bake. So that I believe, on the whole, agriculturists, those who are cultivating on a large scale particularly, will find it to their advantage to keep the ground well stirred on the surface instead of using a mulch—in view also of the expense of putting a mulch on and keeping it there being greater than the expense of keeping the soil stirred. But there is another point. Some of us live in places where the climate is very severe, where the snow that falls in the early part of the winter is likely to be blown off and the ground is likely to be frozen to a great depth, and where very tender plants such as grape vines and some fruit-bearing shrubs are frequently injured by the freezing of the roots. We had an illustration of that in our county, Lincoln, a year ago last winter. I saw hundreds of grape vines that had borne grapes for several years killed out entirely by the death of the root in the winter. Branches cut from these vines in the spring looked as fresh and green as they ever did, and these same branches planted as cuttings made a fine healthy growth, while the plants they were cut from died. That is a case I believe in which a good thick mulch would be a most valuable thing; the mere stirring of the surface of the soil would not prevent the death of the plant from the freezing of the root. I take it, therefore, that we have to use our common sense and judgment in this matter—to judge whether the means we are using are adapted to the end in view, and then act—to mulch when our reason shows us that it would be a reasonable thing, having considered what the nature and conditions of the plant are, and the object we seek to accomplish or the injury we strive to prevent.

Mr. DEMPSEY.—I have practised largely, particularly in market gardening, the theory of mulching which Mr. Beadle has been advocating. In dry weather we have found it just as useful to hoe the plants twice a day, in the morning and the evening, as to apply water as most people do. I have always thought that by opening the soil and admitting the atmosphere we enable the soil to absorb a certain amount of water from the atmosphere; and to prove my theory correct I have taken a bushel of perfectly dry earth and laid it on the surface of a stone and shovelled it and turned it over very often, and I have found that in a very short time that earth became moist. I have never found anything in the shape of mulching that gave such satisfaction as simply cultivating the soil to as great a depth as possible without interfering with the surface roots. Two years ago we mulched half of our black raspberries, and the portion that we mulched at that time succeeded very well; but the next year we found that a great many plants in that portion of the patch failed, and to-day the plants that we did not mulch are doing the best. I have found also, in mulching trees, that after two or three years those mulched have shown the effects of the mulching by the plants perishing. I could only account for that by supposing that the mulch had encouraged the fibrous roots to come near the surface, and that not having sufficient protection when winter came, they perished. But I leave that to be decided by those who understand these matters better than I do; I simply

give you the result of my experience. Most assuredly we do every year mulch with leaves some of our most tender varieties of grapes, and we find it very beneficial to do so ; but we remove the mulch in the spring. Then, some of our most tender roses, such as some tea roses which we grow in the open ground, we invariably mulch in winter ; but the mulch is always removed in the spring. In the case of tender plants, the mulching around the roots seems to have a tendency to prevent the frost penetrating to the roots, and to enable the plants to withstand a very much lower temperature than they would be able to do without the mulch.

Mr. GOLDIE.—What material do you use for winter mulching ?

Mr. DEMPSEY.—Leaves principally.

Mr. HUGH SMITH (of Sarnia).—I have been very much interested in the paper which has been read. As to the scientific theory advanced, I do not pretend to know anything about it, but there are some plants, such as parasitic plants that live without root or water. I cut off the roots of some convolvuluses, and they continued to grow, although the size of the leaf gradually diminished. I cut them three or four inches above the soil. It was a rather succulent plant, though not particularly fleshy, like the tropical plants. That would seem to support Mr. Hood's theory that plants have some mysterious means of drawing moisture.

Mr. SPOTTON.—The case mentioned is not unusual, as you are of course aware that there are plants which do not reach the ground at all. For instance, there are a vast number of orchids which you may hang up or place on a shelf, and they will flourish wonderfully. The explanation of that is of course that they take in moisture from the air. It should not be forgotten that air has always moisture, and that the warmer it is the more moisture it contains, so that to gather moisture it is not necessary that plants should touch the earth. The great fact is that the absorption of moisture goes on. If the plant has roots, it passes through the roots ; if not roots, then probably through the stem or the leaves.

Mr. ROY.—I have an oleander about five feet high in a pot. In the spring I set it out in the ground, three or four inches below the surface, and in the fall, when I went to take up the plant again, I found that the whole bed of earth above the top of the pot was filled with fibrous roots. When I took the plant into the house, these roots of course dried up and withered, and in the following year I found that the plant was much injured by what had taken place.

## THE BEST APPLES FOR THE COUNTY OF SIMCOE.

The next subject was "The varieties of apples best adapted to the climate and soil of the County of Simcoe."

Mr. THOMAS MCLEOD (of Dalston).—My experience of apple-growing is rather limited. I have quite a number of apple-trees planted, but the most successful of all is certainly the Duchess of Oldenburg ; but the Talman Sweet, the Alexander and the American Golden Russet also do very well. We have a great many other varieties planted, but to these I would give the prominence.

The PRESIDENT.—Do the other varieties show tenderness ?

Mr. MCLEOD.—No, but they do not bear. We have had them planted for eight or ten years, and they have never borne anything worth speaking of. The Tetofsky has done very well, but the Duchess is ahead of anything else. The Red Astrachan has succeeded only fairly well.

Mr. J. CUPPAGE (of Orillia).—In my part of the country the farmers generally have from half an acre to an acre under orchard. They grow the Duchess, the Red Astrachan, the St. Lawrence, and a few other varieties, as well as some very reliable local varieties. I would here offer a suggestion, which seems to come within the scope of this Association. In many places there are some seedling apples of excellent quality and worthy of perpetuation, and I think steps ought to be taken to insure their continuance. In that way many varieties might be found thoroughly suited to the climate, and perhaps better than the Russian apples which are now coming so much into vogue.

The PRESIDENT.—I might say that it has been one of the aims of this Association to collect information with regard to seedling fruit. During the last ten years the Association has collected and published all the information it could obtain of the seedlings that were brought under the notice of the Directors; and if you know of any seedling apples of merit, and would be kind enough to have some samples sent to one of the Directors, there is a committee appointed every year to report upon any seedlings that are brought to our notice in that way. There are no doubt in many parts of the country valuable seedlings of various fruits. I have been told that there are plums growing beyond Parry Sound that are worth perpetuating.

Mr. JOHN NESS (of Innisfil).—Almost every variety of apple planted in my orchard seems to succeed. You will find about forty varieties of my fruit on exhibition in the hall, including the Baldwin, the Northern Spy, the Cayuga, Redstreak, the Rhode Island Greening, the Tetofsky, the Pewaukee, and the Wallbridge. I brought a limb of the Baldwin which had fifty apples on it, although some people think it is a variety that will not grow in this part of the country. The Rhode Island Greening some of my neighbours cannot grow, but it succeeds very well with me. In fact almost everything I plant seems to succeed. My soil is inclined to be a clay loam. The Ribston Pippin does very well with me.

Mr. DEMPSEY.—Do you have much snow?

Mr. NESS.—Oh yes; sometimes ten feet high.

Mr. DEMPSEY.—If you were going to plant half-a-dozen varieties which would you plant?

Mr. NESS.—I would be something like the man who said that if he was going to plant an orchard of a thousand trees he would plant nine hundred and ninety-nine Baldwins, and he did not know but he would plant all Baldwins. I have been told that the Colvert is being shipped to the English market, and that it is taking well.

Mr. DEMPSEY.—It is an excellent apple for shipping, but it needs to be picked on the green side.

Mr. GOLDIE.—Don't you like the Northern Spy?

Mr. NESS.—I do, but it takes too long a time to blossom. I have one that did not bear until it was sixteen years old. My land lies to the south-east, and it is naturally drained. I have put two artificial drains through it, but it does not need them. My land is a red loam, inclined to clay and pretty stony.

Mr. GEORGE E. SNEATH (of Midhurst).—I have not found that all varieties of apples are equally hardy here. I think in all probability that Mr. Ness's exceptional success is accounted for by his position with reference to the lake. His fruit farm is not very far distant from Kempenfeldt bay, which I think has probably an influence on his crops of fruit and on the life of his trees. I have found the Ribston Pippin rather tender and a shy bearer; and besides, by the time it is old enough to bear anything of a crop, it becomes so afflicted with black heart and other diseases that it is about ready to be cut down. I have not found either the Rhode Island Greening or the Baldwin hardy enough for this climate. I have two Baldwins in my orchard which fruit very well, but it is the exception rather than the rule in this county. Both it and the Rhode Island Greening generally kill back in the winter what they have gained in the summer. The Duchess of Oldenburg and the Red Astrachan grow well and fruit well. The Colvert also does very well and it is easily disposed of, as it is a fruit that takes well in the market and it is of very good quality too. I have had very good crops of the Colvert during the past two years. The American Golden Russet seems very well suited to this climate. The Northern Spy is a good bearer, but is rather too long coming into bearing for anyone who grows only a few varieties. The Seek-no-Further bears very well and seems to stand the climate. The Talman Sweet stands the climate and takes the market when other varieties are scarce; but I would not recommend any person setting out an orchard in this district to plant a very large quantity of either the Baldwin or the Rhode Island Greening.

Mr. DEMPSEY.—If you were making a collection of half-a-dozen varieties, which would you plant?

Mr. SNEATH.—It is very hard to choose between the Duchess of Oldenburg and the



Red Astrachan for an early apple, because the Duchess is a very hard apple to market, as it is easily discoloured; but either of these varieties I would recommend. For a fall apple I would take the Colvert and for winter varieties, the American Golden Russet, the Northern Spy and the Talman Sweet. The Northern Spy bears heavily one year and has no apples the next year.

Mr. GOLDIE.—Have you tried pinching to bring it into bearing?

Mr. SNEATH.—No, I have not.

Mr. GOLDIE.—I have seen it brought into bearing as quickly as others in that way.

Mr. SNEATH.—Bad pruning has caused a great deal of harm in this district. Some pruners go around the country and prune the trees in a way to let the moisture get into them and destroy them.

Mr. DEMPSEY.—What is your soil?

Mr. SNEATH.—Sandy loam with a clay bottom. It is high land, naturally well drained, so that it does not require any artificial draining at all.

Mr. ROY.—How about the Snow Apple?

Mr. SNEATH.—It grows very well in every part of the country, and I would recommend it.

Mr. ROY.—Have you any seedlings!

Mr. SNEATH.—I have two or three, but I could not recommend them.

Mr. GOLDIE.—I have observed that where there is a gravelly subsoil, with not very heavy covering, the trees suffer more from the winter cold than in other soils.

Mr. SNEATH.—Our trees do not suffer from winter cold because we have such a heavy fall of snow. We find, however, that in the case of small fruits rather than apples it is a good thing to mulch, because the mulching keeps the plants back in the spring and prevents them from starting until the late frost is over. Then we take off the mulch.

Mr. SEWREY, Mayor of Barrie.—I may give the association my experience with regard to the apple crop during my residence in Simcoe. I have noticed that trees will thrive for half a dozen years, when the bark will begin to burst open and the trees will die, although surrounding orchards appear to be healthy. I could not account for that for a long time, but at last it struck me that in this country the frost very seldom penetrates the soil. In the month of March, at mid-day, the heat is almost like summer heat and the snow melts, while in the evening the temperature almost reaches zero. My idea therefore was, that during those warm hours of the day the sap started from the root to the branch, and before it returned in the evening the frost caught it, and as the summer approached, owing to a repetition of this process, the bark gradually withered away and the tree died. That was my explanation of the disaster to the fruits. My brother, who has a very nice little garden of fruits in this town, has been greatly troubled in that way, and I suggested to him in the winter, before the warm days approached, to take a shovel and remove the snow from around the tree, so that the frost could penetrate the earth and prevent the sap from starting. In the Niagara district the frost penetrates very deeply into the ground and the sap does not start prematurely in the tree; but here the earth is as warm in winter as in summer—so warm that if you remove the snow you will find the grass growing beneath. Perhaps my theory is correct, and perhaps not; but the difficulty is one that has discouraged fruit-growers in this part of the country a great deal.

Mr. BEADLE.—Have you tried the experiment of shovelling the snow from the surface of the ground?

Mr. SEWREY.—I suggested it to my brother, but I have not questioned him as to whether he did so or not. I have noticed, however, that during the last year or two the trees in his orchard seem to have been thriving and producing excellent fruit.

Mr. GOLDIE.—Does that difficulty exist in the open orchards?

Mr. SEWREY.—Yes, I have noticed it in travelling throughout the country that the bark on the stock of the trees dies. I do not know whether the cause I suggested is the true one or not.

Mr. GEORGE SNEATH.—I have grown trees for thirty-seven years, and I have never lost one in the way the Mayor speaks of.

Mr. SEWREY.—I have observed it in Mono, Vespra and Barrie. I only put this theory



forth as my theory to account for the trouble. There may be other reasons, such as too rapid growth.

Mr. SPOTON.—I know a gentleman who has lost some trees in the same way. I do not think he had any theory as to the cause, but his remedy was to split the bark.

Mr. HUGHES.—Perhaps some of my experience may be of use on this subject. About six weeks ago I was travelling in the Parry Sound District and came across a man who wanted to know why he could not get his apple-trees to grow. He said they had all burst in the bark, just in the way that Mr. Sewrey has described. I saw his orchard, and found that it was on a southern slope, facing the sun. I advised him during the course of the winter to tramp the snow solid around his trees, and in the beginning of the month of March to nail two boards together in the shape of a letter V, and long enough to come up to the branches, and with that structure to shade the trunks of the trees from the sun during March and April. The gentleman did so, and to-day he has thrifty trees growing in the same places where the others died. I told him further that when planting more trees he should go to the north side of his hill and plant his orchard there. This hill is located on the south side of a lake about four miles wide, and on the north side it runs down to a dense swamp, and I suppose the wind strikes that orchard from the north-west with a sweep of twenty miles; yet there are growing there about fifty of as thrifty young trees as one can wish to see. I always advise my friends if they cannot get the north side of a hill to plant their trees upon, to just shade them from the sun in March and April in the way I have described. My observation has gone to prove this plan perfectly successful.

Mr. CHARLES HICKLING (of Barrie).—The mode I adopted some years ago to preserve my orchard was to tramp the snow around the trees, and then to throw some manure on the top of the snow so as to prevent it going off early in the spring. In that way I prevented my trees from budding for a week or a fortnight, which aided me a great deal in saving my crop. With regard to the best varieties of fruit for this district, the Northern Spy has done fairly well with me, although some trees have been rather shy bearers, and some of them have been as long as fifteen and twenty years in coming into bearing. Nevertheless, the Northern Spy is such a valuable fruit and bears so well when it once begins that I do not think we should turn our back upon it. I find the Baldwin to be not only hardy but a much better cropper than the Spy. All the Baldwins I have are top-grafted, but they are producing a very heavy crop of excellent fruit. The Rhode Island Greening has not succeeded quite so well. Some of the trees have been injured by the borer, but others have borne a good quantity of fruit, and the apple is so valuable for market and for shipping that I should not after all discard the Greening. The Golden Russet is a very hardy tree and a very prolific bearer. The Wagener seems to do fairly well, but it is a rather shy bearer. The Duchess of Oldenburg, although not the earliest apple we have, is I think the fastest growing, and it can be brought into market and sold green earlier than any other. But it certainly is the most prolific bearer of any of our early apples; I think the largest crop of fruit I have produced consisted of Duchess apples. I am sorry to say that the Snow apple has not been very successful with me on account of the spotting, although for a few years I did raise some very heavy crops of snow apples of very good quality.

Mr. ROY.—Have you any spotting this year?

Mr. HICKLING.—Not this year, but I had last year. The apples are comparatively free from spots this year. The Gravenstein is a very fine apple. The Seek-no-Further is also a hardy apple and a very good bearer; it bears every other year a very heavy crop, and the apples are fine keepers and good for market. The Porter is a very good early fall apple. The St. Lawrence has done very well in this part of the country. The Yellow Bellflower has also done well; I have it top-grafted. The Talman Sweet I have found quite hardy.

Mr. MCLEOD.—Mr. Hickling speaks of the Baldwin, the Rhode Island Greening and the Gravenstein as succeeding with him. I would like to know if that is the experience of other gentlemen. It is not mine.

Mr. NESS.—I have several trees of the Rhode Island Greening growing quite successfully.

Mr. HOOD.—In the county of Simcoe we have very little difficulty in getting apples in summer and fall ; but we have more difficulty in obtaining hardy winter apples. With the Early Harvest, the Red Astrachan, and the Duchess of Oldenburg we have no difficulty. If you should go to our show that is to be held in this town about a week hence you would almost think we had as good an exhibition of apples as you could find anywhere else as far as quality is concerned, although I admit that we may be excelled in quantity and variety. If the subject of discussion had been, what apples are not suitable for the County of Simcoe, I could have said more than I can on the question of what apples are suitable. I do not think Roxbury Russet or the Baldwin is suitable. The Baldwin may be considered passable, but the Roxbury Russet and the Greening are altogether too tender, or my soil does not suit them. Mr. Ness says the Baldwin does well with him. It may suit one man's soil, another man's indifferently, and another's not at all. What we want is a good iron-clad tree that will grow on almost any soil.

Mr. BEADLE.—Have you tried the Wealthy ?

Mr. HOOD.—We have tried that, and it has done the best, but is not properly speaking a winter apple. Then there are the Walbridge and the Mann ; of these I do not know a great deal, but I should like to learn more. The Ben Davis is a good winter apple. Now, one word about the Russet ; it is said to be a good keeper, but what is it worth when it is kept ? The fact is you cannot sell the Russet except when there is nothing else to be had.

Mr. CASTON (of Vespra).—I am only an amateur, and my experience of varieties likely to succeed here not very extensive, for my trees are just coming into bearing ; but I have taken a good deal of notice of other people's orchards, and if asked what variety I would place at the head of the list, a hardy and profitable apple, I would say the American Golden Russet. I have never seen any difficulty in selling it at three dollars a barrel. We have another apple called the Red Pound. It is a large red apple, well flavoured for dessert or for cooking, a good bearer and an excellent keeper, and it sticks well to the tree. I would place next on the list the Ben Davis. It will keep until June, as long as the Russet, and the apple that will keep sound and rosy for that length of time is the apple that will sell. If I had an orchard of seedlings, I think I would top-graft them with the Ben Davis.

The PRESIDENT.—Have you ever eaten them ?

Mr. CASTON.—They taste very well in the spring.

Mr. BEADLE.—They bring the highest price in April of any apples sent to Chicago.

Mr. CASTON.—The Talman Sweet is another very satisfactory apple, and if you get too many trees of this variety you can graft any other kind on them. The Northern Spy I do not think much of. It is a fine apple ; but if you grow a tree for sixteen years, and it then happens to die, you will not make much out of it. The experience of most fruit growers that I am acquainted with is that the Spy is so long in coming into bearing that as soon as it begins to bear it begins to die.

Mr. HICKLING.—That is not my experience.

Mr. CASTON.—Well, I have noticed that ; and the leaves begin to turn yellow. The Yankee tree peddlers used to sell the Rhode Island Greening and the King of Tompkins County in this district ; but they have not amounted to much. I only know of two King of Tompkins trees that amount to anything. I do not think this variety will succeed unless grafted on a hardy stock. The Alexander and the St. Lawrence are good hardy fall apples. I saw two trees of the Alexander the other day that would gladden the eyes of anybody. There is no doubt that both of these varieties will succeed here. I do not know whether you would call the Duchess an early fall or a late harvest apple. I think it is the first apple that is fit to use, and the best apple that has yet been introduced into this country. If we could get an apple that would last until spring, possessing the qualities of the Duchess, it would be the finest apple that we ever saw. It bears enormous crops, but I find fault with it that it does not grow enough wood. The apples themselves, however, all grow to a uniform size, and you never see a spot on them. The Snow has been a serviceable apple, although it becomes badly spotted ; but this year it is spotted only very slightly. The Red Astrachan is a nice dessert apple and a good cooker, but it cannot begin to compare with the Duchess either for bearing or anything else. The Duchess

brought a dollar a bushel in this town this summer, which is a very fair price. As for the Baldwin, I am not acquainted with it; I have not grown it myself, and I do not think it is largely grown in this county, especially in the northern part where I live. There was a Yankee here last spring grafting the Baldwin on some seedlings, and I suppose we shall know shortly how it is succeeding. Something was said about pruning. I think a man who grows fruit ought to know enough to do his own pruning, and never let another person put a knife or saw into his orchard. Prune every year, and let there be no big limbs to cut out. Out of about three hundred trees I have never lost one by the bursting of the bark, and so far as my experience goes I believe this occurs where the trees are forced too much. I have heard others give the same explanation as that given by Mr. Sewrey; I do not know whether that is the real cause or not. I think there is a good deal in the theory that the tree is forced so much that it does not get sufficiently strong in the fall to stand the winter.

MR. GEORGE SNEATH.—We have successfully grown the Maiden's Blush; it has yielded heavily every year, and is a good marketable apple. We have also grown the Gloria Mundi, which thrives well. I have not grown the Baldwin.

MR. A. M. SMITH.—I have noticed an apple on exhibition here marked "Maiden's Blush," which is a different apple from that which I have known under that name. I noticed another marked "Wagener" incorrectly; and I think it is possible that some apples are wrongly named in this district.

THE PRESIDENT.—I noticed a pear marked "Vicar of Winkfield" which is not the same as the Vicar of Winkfield we know farther south.

MR. HICKLING.—I got that pear from Mr. Beadle as the Vicar of Winkfield.

MR. BEADLE.—I will look into the matter and see. It would not be at all surprising if it turned out to be something else. Accidents of that kind often happen.

THE PRESIDENT.—I know, from Mr. Beadle's opinion of the Vicar of Winkfield, that he would not be inclined to regret if it should turn out to be something else. His opinion is that its flavor is something like that of the turnip.

## THE BEST PEARS FOR THE COUNTY OF SIMCOE.

The next subject for discussion was, "What varieties of pears can be successfully grown in the county of Simcoe? On what soils should they be planted? What cultivation should they receive? What fertilizers should be employed?"

MR. CASTON.—I have some pear trees growing, but they have never borne yet, as they are young. My opinion is that pears will succeed best on clay soil, and I would prefer to grow them as dwarfs or half standards. For manure, I do not know that there could be anything better than hardwood ashes. With proper cultivation I do not know why the pear should not succeed here. There are two varieties which I think would do very well, Clapp's Favorite and the Duchess D'Angouleme.

THE PRESIDENT.—I have seen some fine Flemish Beauties in the shop windows here, which I presume were grown in the county.

MR. NESS.—I have Flemish Beauties. I have also the Doyenne D'Ete. I fruited the Bartlett last year, and it bore well; but this year there are none. The Flemish Beauty bears first-class, as does also Clapp's Favorite.

THE PRESIDENT.—What fertilizers do you use?

MR. NESS.—None at all. It takes me all my time gathering the fruit.

MR. GEORGE SNEATH.—I have grown Clapp's Favorite, but it died with the fire-blight. The Flemish Beauty suffered from the same cause, but the trees that are left have done very well. The Seckel has not been injured at all.

MR. MCLEOD.—I have some pear trees that have been planted for seven years, but they have not grown any pears yet. The apple trees are all bearing, but we have never yet had a pear.

MR. HICKLING.—I think the Flemish Beauty takes the lead in this part of the country, and it is the pear best adapted to our soil and climate.

MR. NESS.—The Belle pear does as well.



Mr. HOOD.—I have never had any confidence in planting pears. I have always fought shy of them.

Mr. GEORGE SNEATH.—The Josephine de Malines is a very fine pear; it cannot be excelled.

Mr. GEORGE E. SNEATH.—I planted quite a number of trees of the Flemish Beauty variety a few years ago, but unfortunately in late years the fire blight has attacked them, and there are very few left. I believe that pears in this part of the country do not require any heavier pruning than pinching. I have planted Clapp's Favorite and the Bartlett, both of which do very well. We use barnyard manure for stimulating the trees.

Mr. ROY.—Nearly all of my pear trees this year are blighted, except the Flemish Beauty.

### HEDGES IN THE COUNTY OF SIMCOE.

"The best plants for hedges in the County of Simcoe, and their management," was next discussed.

Mr. MORGAN.—I have never tried anything but the barberry, which will grow anywhere, under any circumstances, and in all times and manners. You cannot kill it; the mice do not seem to hurt it; and its fruit is particularly nice when stewed with other fruit. I believe it to be almost ironclad. I have not tried any other.

Mr. GOLDIE.—Has any one tried the buckthorn?

Judge BOYS, of Barrie.—I have tried the buckthorn, and with success. The cedar is also used, but the objection to it for a hedge is that some portions of it die, leaving unsightly gaps. Another hedge is made with the privet, but from my experience I would certainly recommend the thorn hedge in preference to all others.

The PRESIDENT.—How did you get your native thorn plants?

Judge BOYS.—I got a gardener to put them in, who got them directly from the woods.

Mr. CUPPAGE.—I have tried the buckthorn, but it is not as hardy as the native thorn.

Mr. BUCKE.—The buckthorn is hardy enough in our district, and makes a pretty, ornamental hedge, but it is not strong enough to resist cattle.

The PRESIDENT.—It can be made so by pruning, and every little branch has a thorn on the tip.

Mr. GOLDIE.—My father made a hedge from the buckthorn, and he kept it trimmed four feet from the ground; and so strong was that hedge that I believe a wild Texas steer would hardly make his way through it. The buckthorn makes a beautiful hedge and is perfectly hardy.

Judge BOYS.—I think the secret of success with regard to all these hedges is pruning. Any of them will do well if properly attended to.

Mr. GOLDIE.—Another excellent hedge might be made from the native crab apple. It is perfectly hardy, and although I have never seen it in a hedge, I think it would make a beautiful one.

Mr. BEALL.—I was glad to hear Mr. Goldie commend the buckthorn, only I would not let it grow as high as he does. I think it should be checked by cutting it from one to two feet from the ground. I have bound mine down perfectly flat. Of course that does not kill the top of the shrub; that goes on, and the plant itself throws out an innumerable number of shoots beneath the cutting. There is nothing to equal it for a hedge.

Mr. ROY.—I have tried the cedar, the spruce and the hemlock, but I have succeeded with none except the privet.

At five o'clock the Association adjourned until 7.30 in the evening.

The rest of the afternoon was occupied by a visit of the gentlemen present to the strawberry farm of Messrs. Morgan & McVittie, just lying at the outskirts of the town.

The meeting in the evening was held in the Town Hall, and was attended by a considerable number of the citizens of Barrie, as well as by the members of the Association itself.

## QUESTION DRAWER.

### THE BEST TREES FOR THE COUNTY OF SIMCOE.

QUESTION.—From what part of Ontario should trees be purchased in order to succeed in Simcoe?

The PRESIDENT.—I suppose the writer of the question means, Where should the trees be grown?

Mr. CROIL.—I should say further north from here. We consider that a tree which has succeeded in Renfrew should succeed in our district.

Mr. HICKLING.—I think perhaps the county of Simcoe might compete in that matter. Of course the farther north you go the more likely shall we be to get trees that will succeed here; but what I have grown here I think might be transplanted a hundred miles north of this and succeed well. The farther north you can get the trees the better.

Mr. McLEOD.—I asked this question in order to learn what would be the best place to buy trees from. I bought trees from Toronto which were supposed to have been grown in South Simcoe, and none of them grew at all; on the other hand, I got some from Rochester and some from the neighbourhood of St. Catharines which have done very well; and my reason for asking this question was to learn from the experience of other people, where they got their trees, and which succeeded best, so that I might be guided in my future purchases. So far as my experience goes, I have found the trees from the neighbourhood of St. Catharines a long way ahead of any we got anywhere else.

### MUSHROOMS.

QUESTION.—How can mushrooms be grown successfully?

Mr. HARRIS (of Barrie).—All old countrymen know something about mushrooms, because in the old country they are grown much more generally than here; and I see by the papers that Ireland this year has exported a great many tons of mushrooms into the London market and that they are yielding a large revenue. In this country mushrooms do not generally grow on meadow land. When I came to Barrie in the year 1881 I got a place on a hill—a very dry spot—and began to grow mushrooms. The first year I had none at all. The second year I had some; but as the garden needed manure I got an old mare, and the manure that resulted was spread over the ground. Last winter I kept the manure in a shed and took care not to let it heat very much, and in the spring I tried it in a bed by itself, and the consequence is that I have gathered a quantity of mushrooms that will bring me from ten to fifteen dollars in the Toronto market, and among them were some of the finest mushrooms I have ever seen. One morning the bed seemed to be covered with them.

The PRESIDENT.—Did you try mushroom spawn?

Mr. HARRIS.—No; I did once, but did not get any mushrooms. I do not think I ever found a way of growing them successfully until this year.

Mr. HUGH SMITH.—I do not know anything about mushrooms, but I would say that the common Puff-ball of the pastures is an excellent thing to be used like the mushroom, if gathered while young and fried with bread and butter.

### APPLES FOR SHIPMENT TO EUROPE.

QUESTION.—What is the most profitable apple for shipment to Europe?

Mr. DEMPSEY.—It depends materially upon your market. For an Edinburgh market you want a large apple; Bailey's Sweet does very well, but for the London market you want a medium sized apple. Almost invariably the Golden Russet does well; I have never received an order which it would not be qualified to fill. The Northern Spy is a very profitable apple for that trade; and my brother makes a success of shipping the Colvert. The Ribston Pippin is also a good apple for shipping, and it produces large crops. Pick the apples when about two-thirds grown, before they color at all, and they will com-

mand enormous prices in the English market, from 25 to 30 shillings a barrel ; but if you cannot pick them before they color, do not ship them, as they fail on the road. If we could grow Cox's Orange Pippin I think it would sell well, but it is so slow a grower that it would not pay any man to grow it unless he grows it for his great grandchildren. The Ben Davis is a good apple to ship anywhere, though it is not fit to eat ; but when we are shipping apples we are not eating them.

Mr. ROY.—I always understood the Newton Pippin to take the highest prices in England of any apple that is shipped.

#### THE MOST PROFITABLE RASPBERRY.

QUESTION.—What is the most profitable variety of raspberry, either red or black ?

Mr. A. M. SMITH.—Probably if confined to one red raspberry I would say the Cuthbert, though there are several other good varieties. If growing for market, and if you have not a long distance to ship, you would probably realize as much from the old Highland Hardy as from any other variety. It is the very earliest, coming close on to the strawberries, and it commands a good price, although it is rather inferior in size and quality to some others. The Turner for cold districts is a valuable red raspberry, and ought to succeed anywhere in this northern part of the country. In blacks, at present I would recommend the Tyler or Souhegan—they are about the same thing ; the Gregg in some localities does remarkably well, while it fails in some soils. With me it was almost a failure last year, while with some of my neighbours on light loamy soil it succeeded admirably. If your soil is a light loam, the Gregg ought to do well ; but on clay I do not think it will do so well. Another black cap which is claimed to be a better bearer than the Gregg is the Ohio, but as I have not fruited it myself I cannot speak from experience.

Mr. BUCKE.—Have you fruited the Reliance ?

Mr. A. M. SMITH.—Yes, I fruited it this year. It is a very promising red raspberry, although the colour is a little dark. For market, you want a good bright colour. One objection to the Philadelphia is its colour ; otherwise it will produce probably as much fruit as any variety we have. The Reliance has a little better colour, and I think perhaps it is a little hardier.

The PRESIDENT.—Do you have to consider quality in supplying the public, or is it quantity only ?

Mr. A. M. SMITH.—It is generally quantity. The Cuthbert is superior in quality, colour and size to the Philadelphia.

Mr. MORGAN.—Of the reds I have no doubt but the Cuthbert is far the best of those I have grown or seen grown. It is certainly hardy, a great cropper, and its flavour is exceedingly good. The Turner is a very fair berry indeed. The Brandywine, of which we heard so much, I do not like at all. It is hardy, but it grows small. In blacks, the Mammoth Cluster is sure, and its flavour I think is superior to that of the Tyler ; but the Tyler is about ten days earlier than the Mammoth Cluster, while the Gregg is ten days later. By growing these three varieties, I can continue the black cap season over about three weeks. The Gregg, which is said to be not at all hardy in some places, is perfectly hardy with us, and needs no protection whatever. The only objection to it is that it is liable to be broken down by the snow ; but throughout the winter it lives right up to the tips.

#### BLACKBERRIES.

QUESTION.—Would blackberries be likely to succeed in this county ?

Mr. MORGAN.—There are two which will certainly succeed here, which are perfectly hardy—Taylor's Prolific and the Snyder.

Mr. BEADLE.—Have you tried Stone's Hardy ?

Mr. MORGAN.—No.

Mr. BEADLE.—They say it is hardier than either.

Mr. MORGAN.—If it is hardier than the Snyder, I would like to see it.

Mr. CASTON.—Have you tried the Kittatinny ?

Mr. MORGAN.—That has not succeeded at all ; neither has Wilson's Early. I think



the only two that will do for this section are the Snyder and the Taylor. The wild crops are immense in this neighbourhood, and there is comparatively little difference in size between the wild and the cultivated blackberries,

The PRESIDENT.—How does the Snyder compare with the wild?

Mr. MORGAN.—It is very much better as to flavour, but it is not very much larger. I think I have seen as large blackberries growing wild as I ever saw, except the Kittatinny.

Mr. ROY.—My experience of the Early Wilson is that it kills down three years out of five.

Mr. GEORGE OTTAWAY (of Barrie).—I have tried the Kittatinny, and have found it to kill down every year.

The PRESIDENT.—I would strongly advise you to root out the Kittatinny, and to plant Snyder.

#### THE HARDIEST AND EARLIEST GRAPE.

QUESTION.—Next to the Concord, what is the most hardy and earliest ripening variety of grape?

Mr. CASTON.—I asked that question. In this county, to succeed in growing grapes it will be necessary to cover them in winter, because our winters are so severe. The Concord, I think, has succeeded pretty well, and I should like to know if there is any other grape just as hardy that will ripen earlier than the Concord and that is of better quality.

Mr. BEADLE.—Of course I do not live in this county, except just now, and I have no experience in ripening grapes here nor in a climate just like this. But if I were living here, and were trying to raise grapes, I would try the Early Victor for one. I believe it will prove as hardy as the Concord, if not more so; it bears some resemblance to the Clinton in that respect. Then I would try the Linden, which is a seedling of the Concord, but ripens at least two weeks before it. My vines have only borne two years yet; neither the bunches nor the berries are quite so large as those of the Concord, but I would believe it to be the Concord if it were a little later in the season, as the taste is very similar. The Worden ripens just after the Linden, and generally a little earlier than the Concord—I think about a week. These four varieties would all ripen well here; they are all black grapes. A year ago last winter a neighbour of mine who had about a hundred vines of Moore's Early, planted about a year, lost nearly every one of them, and I have been afraid since to recommend anyone to plant Moore's Early in a cold climate; and yet his Concorde, which were growing almost by the side of his Moore's Early vines, and which had been bearing grapes for eight or ten years, were many of them killed out and out by that same winter, and a little farther on in his vineyard a grape vine which is as early if not earlier than any of those I have named—the Champion, a very hardy thing—was killed out also, although it had been bearing for many years. Accidental circumstances like these may not be fair to judge by. I would therefore recommend you to try Moore's Early. It ripens about the same time as the Early Victor, but has not so good a quality. If any of you feel like growing grapes here to send to some place farther north before the neighbourhood can get grapes for itself, I would advise you to grow the Champion. It is the most worthless grape you can grow to eat, and it is the best grape you can possibly grow to sell. I have twenty-two vines of the Champion, which were fruited for the first time two years ago, and my gardener said to me, "I am going to Toronto, and I think I will take those Champion grapes with me." "Well," I said, "do, because nobody here wants them." He took them, and brought me back \$72. A red grape I would advise you to try is the Massasoit. It is hardy, and it ripens early, and it has an agreeable flavour, although it tastes a little musky like all Rogers' grapes. Just after the Massasoit comes the Brighton, and if you do not let it get very ripe, I think you will find it just about the best grape you have. Pick them from the vine before they are dead ripe, and you will have them at their best. If you let them get dead ripe they will lose some of their sprightliness and be somewhat flat. The vine is very prolific, the bunches being large, and the berries of as great a size as the Isabella's. I think you can grow these two varieties of grapes here, and I think you will be pleased with them.

Mr. BEALL.—What is your opinion of the Vergennes?

Mr. BEADLE.—It is a good grape to keep, and I am told that it is hardy, having originated in Vermont, which is a cold country. I suppose you could grow it here, but it is not an early grape; it is a medium ripening grape; it will not ripen a day earlier than the Concord with me; but you can keep it. I have seen it in February as fresh and fine as at any time of its life.

Mr. CASTON.—There is great danger in this part of the country of early fall frosts, so that the great thing is to get an early ripening grape for this county.

### ADDRESS OF WELCOME.

Mayor SEWREY then came forward amid applause, and said:—Mr. President, I feel that Barrie has been greatly honoured by this visit from the Fruit Growers' Association of Ontario, and I believe that much good will result from the meetings held here. The questions which have been brought forward, and the discussions which have taken place, will induce the people of this district to think and study more about the subject of fruit growing. It is one of the important industries of this country that ought to receive greater attention; and the fact of your Association meeting here will, I am satisfied, stimulate farmers and others in this district to engage in the cultivation of fruit to a greater extent than before. I believe that fruit growing is one of the most profitable enterprises that a farmer can undertake; it requires less labour and less care, and yields greater profit than almost any other department of agricultural industry. I do not feel disposed to take up your time in making a speech to-night, as I hope to have another opportunity of addressing you. I will merely thank you, on behalf of the inhabitants of Barrie, for the honour you have conferred upon us in having held your meeting here. I believe the discussions which have taken place and will take place will confer a lasting benefit on the people of this town and the surrounding country. (Applause.)

The PRESIDENT.—Mr. Mayor, ladies and gentlemen,—On behalf of the Association I beg to tender our thanks for the very kind and cordial words of welcome which his worship the Mayor has just uttered. The Association is in the habit of meeting from time to time, generally three times in the year, in different parts of the Province, partly for the purpose of giving information, but mainly for the purpose of obtaining information as we go, with regard to the growth and production of fruits in Ontario. One of the chief aims of the Association has been to extend, if possible, the area of fruit culture in our Province, and thus to give to a larger number of our people from year to year the advantages and privileges which those of us who live in the more favored portions of Ontario have long enjoyed. In doing this work we naturally visit from time to time the more northern sections of the country, and so we learn what varieties are succeeding there and are also enabled to form some idea as to what varieties we can suggest for further trial, from our own experience and from the experience of our neighbours in the United States, many of whom live in sections as cold or colder than you do here. I think the visits of our Association to the northern sections of the country are productive of good on both sides. We receive good ourselves, and we give the benefit of our discussions to a large number of people throughout the country by means of our Annual Report; and as we have about 2,500 members, you can easily judge of the extent of the influence of this Association. I think this meeting will result in good to Barrie, as it will show what a large variety of fruits you can grow here, and I should not wonder if you would have a large immigration to this district when the members of the Association find that you can grow so many things and grow them so well. Mr. Smith, of St. Catharines, says the Gregg raspberry is tender; Mr. Morgan, of Barrie, says it is perfectly hardy; so that, for that variety, it seems that you have a more favoured climate than even St. Catharines. This meeting, I think, will also do you good in stimulating a desire among your people for fruit growing on a more extended scale. I do not know anything a man can engage in that will yield him as good a return in as short a time as growing some of the smaller fruits where there is a good market and fair prices. This kind of missionary effort we endeavour to carry forward wherever we go. Last summer I had an opportunity, in company with the secretary, of visiting Manitoba. We were in Winnipeg at the same time as the Hon. Mr. Joly,



who had with us been attending the Forestry congress in St. Paul, Minn. The Lieutenant-Governor got up a meeting at which we were called upon to answer and discuss some important questions relating to fruit growing and forestry, and that very night a Fruit Growers' Association for the Province of Manitoba was organized. Here, too, I am sure you will be greatly benefited by the discussions which have taken place on the various queries that have been so well answered by the members of our Association. Again thanking you, Mr. Mayor, on behalf of the Association for the very kindly welcome you have given us, I will not detain the audience any longer. (Applause.)

### AN INJURIOUS INSECT.

The question was then taken up: "What insect is destroying the foliage of the maple trees on the grounds of Mr. C. H. Ross? Are its depredations confined to that locality? What application can be used or means adopted to destroy the insect or prevent its ravages?"

THE PRESIDENT.—I had a chance of asking Mr. Ross one or two questions about this insect yesterday. It appears that it gnaws at the base or somewhere along the stem of the leaf of the maple, and in a very short time so injures the petiole of the leaf that it breaks off and the leaf falls to the ground, and he says that in this way he lost almost the entire foliage of his maple trees during the summer. He could not explain to me what the insect was like, and I could not, from his description, make out what it could be. My impression is that it is one of the snout beetles—one of the curculios. The habit he describes is a habit of the beetles belonging to that family. I suppose Mr. Smith knows the peach tree curculio in Niagara, the large grey one, which gnaws into the stems of the leaves of the peach tree, and causes them to fall off. This insect may be a curculio, or may be something else. I cannot throw any further light on the subject. If Mr. Ross were here we might cross-question him, and learn something more about it. If any gentleman present has had similar experience, we should like to hear from him.

### FLORICULTURE IN THE SCHOOLS.

The next subject for discussion was: "The desirability of interesting our children in floriculture by the cultivation of flowering plants and trees in the school grounds. Can the study of Botany be introduced with advantage into our public schools?"

THE PRESIDENT asked Mr. Spotton to open the discussion.

MR. SPOTTON.—I should be very glad indeed to make a remark or two on this subject, but I should like first to hear the views of the members of the Fruit Growers' Association themselves. I am not engaged in public schools proper. I see Mr. Morgan, the Inspector of Public Schools, and several public school teachers present. I should be glad also to hear from them.

THE PRESIDENT.—I will ask the chairman of the School Board of St. Catharines, our secretary, who, I know, has something good to say on the subject, to address you.

MR. BEADLE.—I have some views on this subject, but I am sorry to say they are largely theoretical. The grounds of our schools in St. Catharines are about large enough to hold the school buildings and to leave a little room for the children to exercise in during their fifteen minutes recess; and that is about all the ground they have. I have often said to the members of the board, "I wish we could manage to get a few trees and shrubs into some of these yards," and the reply always is that the children want all the ground to play in, and that they have stamped it down so hard that nothing will grow in it. I have also spoken sometimes to gentlemen in charge of the schools in the surrounding country, and I have asked them, "Why don't you do something to make these school grounds pleasant?" I have an idea that if the people in charge of our schools would take a little pains and spend a few dollars in making the school grounds cheerful, the children would learn better, they would be more disposed to go to school, and they would feel more at home in a school that looked like a pleasant place, with cheerful and attractive surroundings. Instead of that you have a brick building in the middle of a ground as bare as the back of your hand, as infertile as Sahara and about as cheerful. I do not think the influence of



such conditions is the best thing for our children. Then I have another idea on this subject. We want to familiarize our children with the things that are about them every day of their lives. I have asked young men who had gone through the schools the names of various trees, and very common trees. They did know a basswood and a beech, but some other trees not quite so common they knew no more about than they knew about the trees that grow in the tropics, which they have never seen in their lives. If you show them the plants that grow beneath their feet in the meadows or the woods, not one out of a thousand can they name or tell the family it belongs to, or what its qualities are. Now, I think that is all wrong. I think in the first place we ought to make our school-houses and our school grounds as bright and cheerful as we can. I think we could easily start the children growing a few flowers. The late James Vick used to offer—I do not know but in all the United States—to give to any school board a certain quantity of flower seeds on condition that the children should have ground allotted to them in the school yard, and be allowed to grow the flowers there under the supervision of the teacher, and should make an exhibit of those flowers at the next fair of the county; and the school that made the best show of flowers should have a certain quantity of seeds, perhaps two dollars' or five dollars' worth the next year, to plant. Now, I believe the children who are thus taught to grow flowers in the school yard, and who have a teacher with good sense enough to give them a little instruction as to how plants grow and as to the parts of a plant, would take so much pleasure in their work that they would hardly feel that they were learning something. They would not look upon such instruction as a lesson, and they would regard their school grounds as something they could take a pride in and love to go to; and instead of being a barren waste with a building in the middle, the school grounds would be a place of beauty and cheerfulness. The study of botany in our schools I hold to be exceedingly desirable. If I had the control of our schools I would abolish some of the little fragmentary things the children are now drilled upon, which are of no earthly use to them, and I would substitute instruction with reference to the things that are about them every day. I would make our President professor of entomology for the school teachers of Ontario until they learned enough to enable them to tell their children something about the butterflies and the bugs, and to open their eyes to the wonders of nature about them. A man lately came to me and said, "I do not know what is the matter with my plum trees—a great many of the plums are falling off." I said to him, "Are you living in this nineteenth century, and do not know what is destroying your plums? Have you a horticultural society here?" "Oh yes," he answered. "Did you ever attend one?" "No, I do not know as I did." "Well," I said; "you had better take the Horticulturist." That is an illustration of how the want of knowledge of the ordinary things about us is affecting our people. I will not go further into the question of teaching botany. Our President can, if he chooses, tell you that there are plants growing in our fields that are valuable for their medicinal qualities, and our people know nothing about them. There is the common couch grass, for instance, which our farmers little know is worth so much a pound if they choose to gather it up and sell it. The President spoke of me as chairman of a school board. Well, you know all that the chairman of a school board has to do is to sign cheques; that is the most of my connection with the schools. There are gentlemen here whose business is to inspect schools, to train teachers, to teach the children. These are the gentlemen who can give us light on this subject, and I hope they will make their light shine until it shines into the rooms of the heads of the Education Department in Toronto, who control the schools. I think it is time our Minister of Education was educated up to the idea that our children should be taught something that would enlarge their minds a little more than many of the things that they are now taught.

Mr. MORGAN.—My views are so well-known on this question that I should prefer to hear some other gentleman speak upon it. I will say this, however, that excepting the study of music, I know of no higher, more ennobling and beautiful study than that of plants. I have always held and still hold that it is very important that everything connected with our schools should be made attractive. It is important, in the first place, because it attracts the children to the schools, and I think that we need every power we can bring to bear to encourage our children to attend school. We know that even in towns and cities, truant officers are found to be necessary; and it is certain that in country

districts great difficulty is often experienced in getting children to attend school regularly. That is partly due, I think, to defects in our system of education. We are apt to pride ourselves on having the best system in the world; we constantly hear it from public platforms. But I agree with Mr. Beadle that we are teaching a great deal in our schools that is neither necessary or useful. I think it is partly traceable to that fact that many of our pupils have a great dislike to going to school. There are other causes which need not be enlarged on here. If we can make the school yards and the surroundings of the school so attractive that the children will desire to go there, I think it is our duty to do it. As the child is, so inevitably will the future generation be; as the child is, so very generally are the parents. Anyone driving through the country, as I am doing every day, and passing farmhouse after farmhouse, must be painfully struck with the remarkable absence in the majority of cases of everything which tends to ennoble and make pleasant the homes of our young people. While every means is neglected to make the farms attractive and pleasant, the cry is raised that numbers of our young men are leaving the farms and going into other businesses. If our farmhouses were surrounded by pleasant gardens and orchards and small fruit patches, I think we should soon find that our young people would not show the strong desire they now do to go elsewhere. If we could implant in the children who attend school a strong admiration for and a desire to work among plants and fruits and flowers, we should influence their parents indirectly in the same way, and that influence would have its reflex effect upon the rest of the family; and we might be sure that the next generation of farmers would see that their homes had different surroundings from what they have to-day, and that they would regard matters of this sort very differently from what many of them now do. So that, in view of the great benefit that would accrue in years to come from this kind of instruction, I look upon it as one of the greatest improvements that could be effected in our school system; but at present I fear that in a district like this, we are very far away from its realization. It must be manifest that when you have an unfenced and neglected school lot, it is vain to attempt to beautify it. Such is, unfortunately, the condition of many. The first thing to be done is to offer such salaries to teachers as will make it worth while for the best class of our teachers to remain in the profession. The next thing is to provide a good school-house with grounds. Thus you insure good teaching and good accommodation. Having accomplished these two things, I look to the beautifying as the third object. In my district of North Simcoe I have endeavoured to bring about this condition of things in some places, and I have in a few cases succeeded through the pluck and perseverance of the teachers. But the most we can do at present is to strive to create such a public feeling that when we apply ourselves to obtain these suggested improvements they shall be made. My only feeling in connection with the matter is that the two first ought to precede—first, the efficiency of the teacher, who makes the school, who is the school, then the proper equipment of the building, and after that by all means the other. I have succeeded in a few cases, and I hope to succeed further, in accomplishing good results. In perhaps twenty schools in the county some attempt has been made even at flower gardens. They have not, however, met with a great deal of success, because, unfortunately at the very time when these gardens need the most attention, both teacher and children are absent from school, and they are left to the mercy of every wandering depredator who comes along; that is, during the summer vacation. But this objection would not apply to the planting of trees, nor to sodding, nor to the planting of some flowering shrubs. This should be done, and I think could be done, in many places; if this Association took a decided stand and expressed a decided opinion, it might accomplish something; at any rate, it would place an additional argument in the hands of those who have the interests of the schools at heart. On the question of teaching botany I shall say nothing. I think I may leave that safely in the hands of Mr. Spotton.

MR. GEORGE E. SNEATH.—I cannot add much to the remarks of Mr. Morgan. The beautifying of the school grounds, in the way proposed, is something which most teachers would like very much to see introduced. I have found that even the bringing of a bouquet to school in the morning, and placing it upon my desk, has a good effect upon the pupils.

THE PRESIDENT.—Have you introduced house plants at all into the school room?

MR. SNEATH.—No, I have not. In the first school I taught I had several shrubs and forest trees planted in the grounds. They flourished well, and had good care taken



of them until last summer ; but this summer I visited the school and found that the trees were all dead, and the shrubs were beaten down to the ground.

Mr. A. M. SMITH.—In one of the most successful schools in the Niagara district the teacher has, during the past eight or ten years, kept up a good supply of house plants during the winter. They have been well cared for, and they form a great attraction to the school.

Mr. MORGAN.—I fear that would be a difficult matter to accomplish generally, because in our region up here the thermometer sometimes goes very low, and anything in the shape of a plant would be unquestionably frozen at night.

The PRESIDENT.—That would not prevent the practice being kept up late in the autumn or early in the spring. Everybody, at some time or other, takes a plant fever. We know with what eagerness we like to go out and scratch the first bare ground in spring and plant something, even if it is only a few peas ; we are delighted to be able to go out and smell the emanations from the fresh earth and drink in the fragrant air. I have seen the plan of keeping house flowers carried out very successfully in our schools in London. Some of the lady teachers have taken a warm interest in the matter, and during a great part of the year house plants may be found in their rooms.

Mr. MORGAN.—That may be done in London and might in Barrie, but not in the log school-houses in the country.

Mr. JOHN CROIL.—If the same encouragement were given to the teachers to beautify their school grounds that is given to the keepers of railway stations, we might have every school ground turned into a garden. We may see an example of what I refer to at the head of the bay here, where the railway station has a beautiful little garden in connection with it.

The PRESIDENT.—It is no doubt a sad truth that a very large proportion of our intelligent young men and young women, as well as old men and women, know so little about the things they are treading on every day. The ignorance displayed in that respect, if carried into any other department of life, would be thought appalling ; people would rise up in indignation ; and yet we submit to the prevailing ignorance on this subject year after year, and make very little effort to remedy the evil. Every season we may see stories in the newspapers about people being poisoned by plants, which a very small amount of information would have prevented. Take a common plant, such as our poison ivy. I was surprised not long ago in meeting with a very intelligent lady who told me that she had been poisoned by some plant, and her arms were much swollen. I asked her if it was not poison ivy. She said she did not know, and she could not tell what poison ivy was like—whether it was a plant, a shrub, or a tree, and she did not seem to have any desire to know what it was like. I think as an association we should take a strong stand, and urge upon the public the extreme importance of giving that instruction which might result in the saving of suffering and of lives sometimes, if it were made general, and the only way in which we can make it general is to begin at the foundation and teach it to the children in the schools. For one I feel that the study of natural history in all its departments is of far greater importance than some of the branches to which so much time and attention are now given in our schools. If the time given to comparatively useless matters, or even a small part of that time, were given to a subject so useful as natural history, it would be a great boon to the country. I hope this question will be agitated until not only botany but entomology also is taught in our schools. I suppose not a year passes but we see in some of the newspapers statements of serious results occurring to people from the stinging of a caterpillar which infests tomato plants, and which is said to sting with its tail. If you saw a paragraph in a paper to the effect that a new breed of dogs had been introduced into the country which stung with their tails, you would think it was a rather tall story, but it is quite as improbable that caterpillars sting with their tails. I just mention that as one little illustration of the ignorance which prevails on this subject. I have seen children, and grown people too, warn children against handling certain plants and insects. They will say, "That's poison, don't touch it," and in that way they frighten the children from becoming familiar with those objects which would afford them a great deal of pleasure and amusement. For the reason that insects are so very injurious to our fruits and plants, and to almost everything



we use, it is of the greatest importance that we should know something about them, as well as about plants. I think the knowledge of botany and entomology should go together, and that our youth in the public schools should be taught both these departments of natural science.

Mr. CHARLES DRURY.—With regard to the beautifying of our school grounds, I think there can be no two opinions, but until the towns and cities give a better example of what can be done in this direction we cannot expect the outlying districts to be very deeply impressed with the importance of the matter. My observation is that in places where the best facilities exist for embarking in this work it is often utterly neglected; there is a piece of ground that is made hard and barren by the constant tramping of the feet of hundreds of children, and that is the end of it. But the inspector for North Simcoe will I am sure bear me out when I say that there is a great improvement in this respect. We must look at all such things from the utilitarian point of view first. This country is yet in a transition state; we are just waking up to the idea that it is as important to beautify our school rooms as to beautify our homes; and while I think there is a great want of taste as yet exhibited in regard to the adornment of our homes, still I believe we are rapidly emerging from the poverty and roughness that must be incidental to the pioneers of a new country, and are gradually developing a taste for what is beautiful and ornamental. This is a subject which I would venture to suggest should be discussed by our public school associations. If a resolution were passed by an association of such importance as this, and backed up by the public school association of North Simcoe, I think we could go to the trustees with an assurance that there is liberality enough among them to give a start to this good work. (Applause.) As to the study of botany in our public schools, everyone will admit that it would be foolish to teach a child botany before he knows anything about arithmetic. If I know that I can send a boy to school as long as he can learn anything, I am not particular as to what he learns so long as it comes in natural order; but most children can only be sent for a limited time, and they should be taught those things which will be most useful to them in future life, such as reading, writing and arithmetic. Our worthy secretary suggests that pressure should be brought to bear on the Minister of Education. At the Council of the Agriculture and Arts Association I suggested that agriculture should be taught in the public schools, and a text book, I believe, will shortly be introduced. But the cry among the teachers of the Province now is that the branches are too numerous, that they are compelled to teach too many subjects, and that in the vast majority of cases children do not remain in school long enough to acquire an intelligent knowledge of any one of them. I therefore rise for the purpose of asking Mr. Morgan and Mr. Spotton whether they think that, at the present juncture, it would be desirable to add botany to the list of subjects now being pursued in our public schools.

Mr. MORGAN.—I have no hesitation in saying that I believe we are teaching or trying to teach too much in our public schools. I think our education is not practical enough. For instance, we are teaching grammar, and not English; we are teaching fractions, and not commercial arithmetic; we are teaching everything under the sun except the English language. I believe that so long as the programme remains as it is now—and I believe it will not remain long as it is now under Mr. Ross, who is a practical man with a level head—so long as it remains as it is now, you can do very little. I, for one, would be strongly opposed to putting on the programme anything additional to what is there now. But granting that it is the duty of our teachers simply to fit their scholars for the battle of life—granting that all they should teach their scholars is to read so readily and intelligently that it would be a pleasure for them to read as well as for others to listen, to write in a fair hand with properly spelled words a fairly expressed letter, to know the elements of commercial arithmetic sufficiently to be able to keep fairly the books appertaining to the house or to the farm; then, if the regular teaching of the schools were limited to that, and the day cannot come too soon when such is the case, the next thing is to let them know something about the wonders of the creation about them. And first and foremost should come, not the study of botany as I was compelled to grind it in the University, but such botany as Mr. Spotton has paved the way to the teaching of by the issue of his little book on practical Canadian Botany, which will appeal to the every-day life of the scholars. But I do not think you should stop there. Nor would I stop with entomology.

We should teach them something of that wonderful world around them with which they have to do every day of their lives, because there is no better cultivation of the intellect than the reasoning from observation of the things about them. I believe the two elements which go to make a man a self-educator are observation and reason—a correct and rapid observation of the facts about him, and a logical reasoning from those facts. That is what has made the greatest scientists and the men most useful in their day and generation. But I do not think we should begin with the children; that is one point on which I differ from Mr. Beadle. I think we should begin with the teachers. If the teachers have never been taught these subjects, they cannot teach them to others. Give me a teacher who, when a remarkably hot day comes and the spirit of mischief is abroad, can just shut down on all work, and interest his school for a while on the very flies that play about the window-pane. After such a pastime the children will return with infinite zest to their studies. Or he might go out of doors, and with his magnifying glass show his children a thousand wonders in the green stuff taken from the ditch by the road-side. Give me such a teacher, and I will show you a school that is alive from January to December. But in answer to Mr. Drury's question, I will say that so long as our programme is as it is, and the teachers teach merely the things they are taught, I think it would be worse than folly to add anything more. The trouble is, not that the children do not want to know these things, but it is often too much trouble to answer them, and even if it is not the teacher probably does not know enough to satisfy the God-given curiosity.

Mr. SPOTTON.—I am very glad to have listened to the discussion on this subject, especially to the practical remarks made by Mr. Drury, and the treatment of the question by Mr. Morgan, the Inspector. I think Mr. Drury struck the nail exactly on the head when he stated that there were more important things that should be taught to our children, whose time in school is very limited, than the study of Natural Science. This question of teaching botany in the public schools, I think, has never come up in any practical shape in Ontario. The question of teaching this subject in the high schools has come up, and I believe its study has been introduced there. My opinion is that the time is hardly ripe for the introduction of the subject in any shape at all into our public schools. I sympathize with the teachers and the children in the amount of work they have to do now, and I think it would be imprudent to introduce this additional subject in any extended way into the programme. Another trouble is that the teachers themselves in this Province have not yet had an opportunity of acquiring the necessary training to enable them to teach this subject as it ought to be taught. As Mr. Morgan has reminded you, the study of botany at college means the memorizing of a great many names which mean nothing or almost nothing to the student. After I left college I had to begin the study of botany over again, and got it up in an entirely different way. My attention was called the other day to an address delivered by no less a person than the Rev. Principal Grant to the Ontario Teachers' Association. He was talking of some fallacies in education, and he spoke of persons who have fads. Well, there are people who have fads; we speak of them as "cranks." The Rev. Principal, after referring to the grammar fad, remarked:—"Another authority comes along and points out that no one can be said to be educated who does not know botany. What, let a child go through the fields without knowing botany! And so he must learn lists of long Latin words infinitely more burdensome than the old Latin doggerel in which rules were committed to memory." And in that flippant manner he discussed the question of teaching botany in the public schools. His idea apparently is that the learning of botany consists in the cramming of technical names. I have a high respect for Principal Grant, and his opinion is worthy of credit, but when he calls that the teaching of botany in the public schools I think it is time for those who know better to speak out. The thing is perfectly absurd. That is not my idea at all. I think a child can be taught enough botany to make him acquainted with many of the things he sees in the fields without requiring him to learn those Latin jaw-breaking names at all. They have their use, but they can be dispensed with in the case of children. Dr. McLennan, in the last report he made of the progress of science teaching, especially botany and chemistry, in the high schools of the Province, points out that while a certain amount of progress is being made the difficulty is to find teachers who can teach it in the proper method, the inductive method, the true scientific method. I believe that thoroughly, and I believe



we must first of all train the public school teachers for this work just as the high school teachers have to be trained. Well, what is the remedy? There are Model and Normal Schools, and we have to get proper teachers there. I believe there are some proper teachers now, especially in Toronto. I believe the science master there is perfectly capable of turning out teachers qualified to teach this subject. I would like to mention to this meeting what has been done so far. During the last two years botany has been one of the subjects on which candidates for teachers' certificates in this Province might be examined. Everybody who knows anything of our educational system knows what an outcry has been raised against the algebraical conundrums which have been propounded year after year to candidates for teachers' certificates—girls and boys alike. Those who have had anything to do with the teaching of girls and boys together know that there is a considerable difference between the girl mind and the boy mind after a certain stage has been reached. It is very rare to find a girl who has any great mathematical power; I have only known two or three. As a rule girls can learn the elements of mathematics; they can learn a little Algebra and Euclid; but when they reach a certain point they cannot go any further. That distinction ought to be recognized. I had some conversation with Dr. McLennan on this matter, and he is a perfect mathematical genius. He expressed his willingness to exempt the girls from the higher mathematics, and to allow them to take botany or music or natural philosophy—any one of these three subjects. I have been curious to see to what extent botany was taken up. Perhaps Barrie is not a fair example, as I have urged upon the girls the advantage of studying botany. In Barrie a fair proportion of the girls took advantage of this option, but not so large a proportion as in other places; and with what result? Did they prepare their botany work any better than their algebraical papers? In Barrie, where girls who took algebra had the greatest possible difficulty in making twenty per cent., just sufficient to scrape through at the last examination, there were girls who made ninety-seven per cent. out of one hundred marks in botany. That showed which subject the girls took most interest in; and the paper was a difficult one, set by a man who knew something of the subject. That is the report here, and I have no doubt there are similar reports elsewhere. The matter is making satisfactory progress, and I think in time we shall have teachers in whose hands can confidently be placed the training of our public school children in this subject. Now, to what extent should we teach it to the children? To the same extent as in the high schools? By no means. I would say, to a very limited extent indeed. I would not have a text book placed in the hands of the public school children at all. I would have the actual plants themselves made use of, and the explanations given to the children in a lively, interesting way. If the teacher was thoroughly well prepared to give these lessons, as teachers ought to be, then I think there would be no objection to their giving their pupils, as a recreation, say an hour on Friday afternoon before closing the school. This is not a novel proposition; it has been carried out in the United States, where children are taught botany in that way. I do not think it is called botany, but lessons on plants. The same thing prevails in England. One of the most interesting papers discussed in the British Science Association at Montreal was on this subject; and it was a matter of great interest to me to learn that of all the scientific subjects which are making headway, botany is far outstripping them all. Of course I can understand that, because the materials for the study exist everywhere, and there is no expense in the way of fitting up laboratories; and then, greatest of all, there is the natural love that children have for flowers. That is something that ought to be cultivated, and there is no difficulty in cultivating it. This subject has been made the basis of an inquiry by an educational commission in England, who went into the matter very exhaustively. They had before them Dr. Hooker, one of the highest names in the history of botany, who was examined very closely, and who explained his views, in which he favoured teaching the elements of botany to very young children. They also examined one of the Professors of Cambridge University, who used to teach the children botany by going around with them gathering specimens, and never used a text book, with very satisfactory results. It is a curious thing, however, that while this matter is progressing so satisfactorily, a new programme for teachers in this Province has been got out, and the subject of botany appears to have been omitted. That is very extraordinary to me, because I knew it had been Mr. Ross'



intention to make that subject not merely optional but compulsory. I do not know whether the omission was purposely made or not. I know that representations had been made to the Department on the subject, though I have not felt it my duty to do so because a book of mine happened to be one of the text books. However, I had no hesitation at all in giving my views to this meeting, because the question of teaching botany in the public schools is of no material interest to me, as I would not have a text book employed. I am sorry to have occupied your attention so long. (Applause.)

Mr. ROBINSON.—I agree very much with what has been said as to the desirability of getting the teachers interested in the subject of beautifying the school grounds because, once the teachers are in sympathy with it, there will not be much difficulty in carrying it out. It seems to me it would be a good thing to have this matter introduced to the teachers' convention of this county—in fact, in all the teachers' conventions in the province. But I think we ought to begin with the teachers a little earlier. Why not begin with them in the Model schools? Would it be out of place for this Association to memorialize the boards of school trustees or the Minister of Education for this object? Why not begin with hardy annuals? I notice that a firm in Detroit has offered to all schools a packet of flower seeds each if they would plant them. Perhaps we have firms in Canada that would be willing to do something similar.

Mayor SEWREY.—I believe the cultivation of trees and shrubs about our school-houses is a very useful thing. The planting of shade trees about the town here has frequently occupied the attention of the council. We have done considerable tree-planting in Barrie, but a great many trees have been destroyed; the boys break them down. A very intelligent councillor introduced the question of planting trees about our schools, at least in front of them, where the corporation have power to plant them, and he urged that the teachers should be instructed to educate the boys to preserve those trees. That has been done, and I believe that in every instance where the trees have been planted around the school-houses they have been preserved. With regard to planting flowers, there are seasons of the year when school is not kept, and that is the time when the flowers require attention; but there is no reason why rose-bushes and other interesting shrubbery should not be planted. I believe if these things were introduced into the schools, they would exert a great influence in the way of leading to the planting of shade trees and flowers about our farm houses. The surroundings of most of our farm houses are about as bleak and barren as those of a log cabin on the prairie. Many farmers lack a taste for these things. From his infancy the farm boy is taught that trees are to be cut down, and he is not taught their value for the purposes of decoration. The consequence is, that our country has been made more barren than it ought to be. Our school plots are usually very small, especially in corporations where land is dear; but if there is nothing more than a tree planted at each corner to indicate the boundary lines of the school property, and if the children are taught to respect those trees, an improving influence is sure to be sent abroad. I think this is a subject which might well be introduced into the public schools.

Mr. DEMPSEY.—While I am very much pleased with the remarks that I have listened to with reference to the teaching of botany in the public schools, and the ornamentation of the school grounds, I am constrained simply to tell you some of the results I have myself witnessed. I knew a lady who last year was teaching a public school in which there were two very unruly and unmanageable boys. So troublesome were they that they succeeded in driving her out of the school. Another lady applied for the school, but the trustees objected to employ her, preferring to have a male teacher who might be able to manage those two boys. However, they were persuaded to employ her, and the first thing she did was to select a number of her pupils and say to them, "I am going to furnish you with seeds for a flower plot; I want that to be yours, and I want you to keep it and take care of it." Then she selected another lot to take care of another bed, and they were all furnished with the plants and seeds as were the others. A few days afterwards I noticed a lot of those boys and girls going to their school with their arms full of plants. The result was that that school was laid out very nicely with flower beds, and the plants bloomed beautifully all summer; and I do not believe that from the spring to the fall you could have found a foot print of one child in those beds. Reference has been made to the possibility of

the flowers becoming neglected during the vacation. Such was the competition that arose among those children over their flower beds that during the vacation they attended to them just as well as they did during the time the school went on. With regard to teaching botany in the schools, I think a certain amount should be taught to all children from a very early age. To illustrate the necessity that exists for this kind of instruction, I will relate a circumstance that occurred in my own house. A noted clergyman, occupying a pulpit in one of our cities, and myself were talking about the producing of new fruit, and he asked me, "How many seeds does it take to grow a tree?" (Laughter.) I thought how much one could become ignorant of everything but his own hobby. I am willing that this should be the case to a certain extent, but there are some things that no one should be ignorant of.

Mr. BEADLE.—I am very much gratified with the discussion which this subject has had to-night. I am especially gratified to find that the educationists of our country are themselves awake to the fact that we have been drilling our children in a great many things that are of no practical use to them, and that it is high time that the education of our common schools should be made something practical and real instead of our trying to cram the heads of our children full of fractions and equations and conundrums, and expecting them to remember all the little islands there are in the Archipelago, which can be of no use to them when they grow up to be men and women. When I find the educationist waking up to the importance of this subject I think there is a good time coming for the children of this country. There was a gentleman in my garden one day who could beat my friend Dempsey's friend. He saw some beans coming up, and he said, "Look, Mr. Beadle, what's this? Somebody has been here pulling up your beans; there are your beans above the surface of the ground." (Laughter.)

Mr. GEORGE E. SNEATH.—With regard to planting rose bushes, there is a bug that eats the fleshy part of the leaf all away in a night or two. If we could only get rid of him, there might be some use in planting rose bushes.

Mr. BEADLE.—The simplest thing in the world—go to the druggist and get a little white hellebore and sprinkle it on the bush.

Mr. SNEATH.—I have tried the hellebore and it is of no use.

Mr. BEADLE.—What is the insect?

Mr. SNEATH.—I do not know.

Mr. BEADLE.—There is just an instance of the need of educating our school teachers; he does not know what the insect is. I suspect it is the thrip.

Mr. MORGAN.—It is the white thrip, and he likes hellebore as a dessert.

The PRESIDENT.—I object to that insect being maligned in that way. He does not like hellebore. He is furnished with a sharp beak by means of which he punctures a leaf and imbibes some of the sap of the plant, and the punctures that he thus makes gradually coalesce and form patches. But the gentleman mentioned that the substance of the leaf was eaten, and that is the way the rose slug works. However, it is easily destroyed by hellebore or Paris-green. The thrip belongs to the true bug family, and is active all through its several stages. In the early stages it is very easily affected by suitable applications; it is then soft and spongy, and a slight touch will crush it. If you take an alkaline solution, not strong enough to injure the foliage, you can kill these little creatures very quickly. The alkaline matter is absorbed into their tissues and destroys them; but if they are left until they mature they become covered with a hard tissue, which makes them more difficult to deal with. They can also be destroyed by covering the bush with a barrel and filling it with tobacco smoke.

Mr. STEPHENS (of Toronto).—I grow some roses, and I never have any difficulty in destroying the thrips with tobacco water, if I take them in time. I make the solution pretty strong. I generally buy a five-cent plug, which will do for half a dozen rose bushes.

The Association then adjourned until the following day.



## COVERING GRAPES IN WINTER.

At the opening of the meeting on Thursday morning Mr. Robinson asked the question, "Is it necessary in this climate, in order to get good grapes, to lay down the vines and cover them?"

Mr. BUCKE.—I happen to come from a part of the country where we always lay our grapes down. No one thinks of dealing with them otherwise about Ottawa. We prune them in the fall, and then lay them down and cover them with soil, and I believe, from the appearance of the grapes grown in our neighbourhood, that it very materially increases both the size of the bunches and the size of the grapes. I think it is even more necessary to pursue that practice in a climate like this because there is less snow fall here than about Ottawa. The vines should be covered with one or two inches of earth, which is quite sufficient, and they will come out much better in the spring. All the pruning should be done, of course, before they are laid down.

The PRESIDENT.—The subject of grapes is on the programme for this afternoon, when there will be an opportunity to discuss it further.

The annual reports of the Directors and of the Secretary-Treasurer were then submitted and adopted, after which the President delivered the annual address—as reported in the proceedings of the annual meeting.

## COMMITTEE ON FRUITS.

Mr. MORGAN presented the Report of the Committee appointed to examine the fruits on exhibition, as follows:

*To the President and Members of the Fruit Growers' Association of Ontario:*

GENTLEMEN,—Your committee, appointed to examine the exhibit of fruit made at this meeting of our Association, beg to make the following report:

Mr. A. Hood, Barrie, showed some fine samples of Wealthy apple, even in size and beautifully coloured, also eleven varieties of grapes. Grapes do not appear to set so well as those in other parts of the Province, the bunches being small though well ripened. The want of size however may be attributed either to the soil or to spring frost. A bottle of wine made from unripe and half frozen grapes showed a clear and beautiful colour, and the quality was pronounced to be excellent.

The President, London, exhibited a Russian water melon, the seed of which was imported by Charles Gibb, Esq., Abbotsford. The peculiarity seems to be that it will keep until Christmas. Your committee are unable to express any opinion as to flavour, being deterred from experimenting by a wholesome dread of the "deadly fruit," as it is called. He also showed a very fine collection of grapes, among which your Committee wish particularly to name: Telegraph—Very close set bunches, small; good flavour at first, but after taste disagreeable. Arnold's Canada—Well grown sample, but wanting frost to bring out quality. Early Victor—Small bunch and medium berry; good flavour. Jessica—Early white grape, small bunch, medium berry; very sweet, good flavour. Seedling No. 11—Resembling large Concord, but berries seem to drop. Concord and Delaware Hybrid—Sweet grape, medium size. In another part of the room he added to his laurels by an exhibit of apples and pears. The six varieties of apples were all fine, the "Ontario" being an extra sample, and the pears comprised Seckel, Flemish Beauty, White Doyenne and Beurre Hardy, the last being a most delicious pear.

Mr. P. C. Dempsey, Trenton, showed a new seedling fall apple, very deep colour, fine grain, juicy and crisp, very good to best; remarkably promising whether for home market or shipping. Well worthy of propagation.

His exhibit comprises also four grapes which reflect great credit on the exhibitor; Lady Washington, Jefferson and Burnet, fine large bunch of excellent quality, and Seedling No. 25, a white grape of good quality.

Mr. A. M. Smith, of St. Catharines, makes a splendid display of some superb bunches of the Niagara grape, grown in Lockport. This grape deserves special mention, being magnificent in bunch and berry. It is the best white out door grape shown.



Mr. Beall, of Lindsay, shows two perfectly ripe bunches of the Niagara grape, and good specimens of the Wealthy, St. Lawrence and Snow apples.

Vice-President P. E. Bucke, Ottawa, has two varieties of grapes on exhibition—Burnet, these bunches being very heavy and closely set and of excellent quality, and Lindley, Rogers No. 9, grown in paper bags; excellent samples, good sized bunches, very closely set.

Mr. J. J. Brown, Barrie, has a very creditable display of fruit, comprising a good sample of Delaware; a medium sized bunch of Rogers No. 9, and the inevitable Champion among grapes; seventeen varieties of apples well chosen, and a seedling grown by Mr. Robert Little, of Innisfil, very large, brilliant red, faintly streaked, sub-acid, strongly recommended.

Mr. Wm. Ness, a farmer resident in Innisfil, makes an exhibit which shows what may be achieved on a farm without interfering with the ordinary work. This comprises a very creditable display of ten varieties of grapes, four varieties of pears, and thirty-four varieties of apples, many of them of good quality, also a seedling fall apple, bright colour and medium in size and quality.

Mr. C. H. Ross, Barrie, showed three varieties of out door grapes, one variety being very well grown.

Rev. Alex. Dawson, of Gravenhurst, deserves special mention as showing what may be done in grape culture at a point so far north. The six varieties of grapes were all exceedingly well grown and well ripened, and occasioned much favourable comment, as did also a splendid branch of Hyslop crab grown by Mr. J. McAllister of the same place.

Mr. John Harris, Barrie, showed two baskets of very fine mushrooms, which he claims were specially produced by the manure from a brood mare. The fungi were certainly well grown, and had a very toothsome appearance.

Mr. W. Roy, of Owen Sound, shows a very good sample of the Ontario apple, and a seedling of considerable promise. He claims special notice, however, by his exhibit of black walnuts. Your committee feel that great credit is due to Mr. Roy for bringing the question of the culture of this tree before this Association. The commercial value of both nuts and the wood, and the remarkable beauty of the tree, should ensure an effort to ascertain all the localities in which it can be successfully grown, and your committee feel that it is a subject which may profitably claim the attention of the Association.

Mr. H. B. Spotton shows three varieties of apples of fine quality.

Mr. Thos. H. McLeod, Dalston, a seedling winter apple, which must prove a good keeper.

Mr. G. C. Caston, Craighurst, a very fine collection of twelve varieties of apples.

Mr. E. S. Lally, Barrie, some prune plums, Flemish Beauty pears, White Doyenne and Buffam; two varieties of apples, all well grown, and six magnificent specimens of foreign grapes grown in a cold grapery. The varieties comprised Black Hamburg, Muscat Hamburg, Bowood Muscat, White Tokay, White Chasselas and Chasselas Musque—the last being most delicious.

Mr. Chas. Hickling, Dalston, took up a table almost to himself with five varieties of out door grapes, well grown, and two varieties of pears; the finest display of apples in the room comprising forty-one varieties, four seedling apples without much promise, and a good exhibit of five varieties of plums—Glass' Seedling being especially good.

Mr. George Sneath, of Midhurst, made a nice exhibit of sixteen varieties of apples.

Mr. Wm. Haskins, Hamilton.—Abyssinia—a black grape with large bunch and berry; quality being first class, clusters well set and hanging well; a very attractive grape. Delaware Seedling No. 1—Same size as Delaware but white, bunches set very closely, and berries fleshy and sweet; highly recommended. Delaware Seedling No. 2—Very similar to No. 1, but smaller though of better quality. Albino—Good sized bunch and berry, well set; very good quality, worthy of propagation. Seedling A—Black grape; good bunch, well set.

Mr. McLean, of Owen Sound, exhibited a remarkably fine pea, called the Murray. It grows from seven to ten feet high, and is wonderfully prolific and of delicious flavour.

Branch of well ripened grapes grown at Cape Elizabeth, Lake Rosseau, Muskoka, probably Salem. Name of exhibitor not given. This point is the farthest north from which anything exhibited comes.

Mr. E. Gilhooly, of Rugby, exhibited a remarkably fine seedling apple, very large, well coloured, crisp, acid ; should prove a remarkable keeper. Very strongly recommended for propagation.

A prominent feature of the meeting was a unique collection of strawberry plants, chiefly of new varieties, brought by Mr. John Little, Fish Creek, near St. Marys. Mr. Little described these in a very clear and satisfactory manner, and completed the display by most generously distributing the plants among the members. The courtesy becomes greater when we reflect that Mr. Little is so universally known as a strawberry cultivator, and that many of the varieties have been sent him for trial before dissemination to the public by some of the most prominent growers on the continent.

Finally, your committee wish to acknowledge the courtesy of Messrs. Morgan & McVittie, florists, of this town, who made a most creditable display of palms and coleus. The *Yucca Incola*, valued at \$25, was exceedingly fine and received much favourable comment from those who attended the really splendid exhibit. Amongst the plants on the table were *Dracænus*, Palms, *Musa*, *Crotons*, *Hibiscus*, *Begonia Rex*, and *Flowering Coleus*, many of which were new varieties of exceedingly brilliant foliage, and specially useful for table decorations for private residences. The room was tastefully decorated with flags and banners, and in this way Barrie did her best to honour the visiting fruit men who assembled at this meeting.

Twelve varieties of beautiful double dahlias were shown from Mr. D. W. Beadle's gardens, at St. Catharines, which reflected great credit on the grower.

Mr. Gilbert Wright exhibits a very nice selection of insects collected in the neighbourhood of Barrie, among them being very fine specimens of our largest moths, *Cecropia*, *Polyphemus*, and *Luna* ; also several species of insects injurious to fruit, notably the plum sphinx, *S. Drupiferarum* ; the grape sphinx, *Darapsa Myron*, and the Army Worm Moth. There are also a number of beautiful butterflies and moths, exhibiting every variety of tint and colour.

Respectfully submitted,

P. E. BUCKE, *Chairman*,  
J. C. MORGAN,  
T. C. ROBINSON,  
WM. BOYS,  
JOHN CROIL.

Mr. Roy, seconded by Mr. A. M. Smith, moved the adoption of the report. In doing so, he stated that he had walnut trees growing upon his place which had been planted thirteen years ago, and were now from twenty to thirty feet high. He thought it was very important that it should be made known that walnut trees could be grown in Ontario so far north. He found the tree perfectly hardy.

Judge BOYS.—I would like to state that black walnut is growing in the town of Barrie. In the garden of Mr. Lount there are three trees, which are among the largest we have in Barrie.

Mr. HUGH SMITH.—I have seen the walnut tree growing in southern Minnesota.

The report was adopted.

#### ELECTION OF OFFICERS.

The election of officers for the ensuing year was then proceeded with.

The President vacated the chair, and the Secretary assumed it and called for nominations for President.

Mr. LITTLE.—I feel great pleasure in nominating our old president, Mr. Saunders, for the reason that I know of no man more competent to fill that chair.

Mr. BUCKE.—I have much pleasure in seconding that nomination.

No other nominations having been made, Mr. Saunders was declared elected by acclamation.

The President then resumed the chair, and said : Gentlemen, I thank you very much for the kindly way in which you have manifested your renewed confidence in me on this occasion. Personally, I have felt that it would be better for many reasons if the Association had a change in its President. I am very averse to any one person having a monopoly of the office of President of an Association of this sort, and I fully expected when elected last year that that would be the limit of my term of office. But as you have so kindly and unanimously expressed a wish for me to continue in office another year I bow to your decision in the matter, again thanking you for your expression of confidence.

Mr. MORGAN.—As a member who for the first time has attended the meetings of the Association—I say it with great regret, but with a promise of amendment in the future—I venture to move the re-appointment of Mr. Bucke to the office of Vice-President, and I do it because I think one great desideratum in an officer of this society is, that he should not only work himself, but that he should make everybody associated with him work. I can bear ample and conclusive testimony to the possession of that quality by my friend Mr. Bucke.

Mr. Stephens seconded the nomination, which was carried unanimously.

Mr. Bucke.—I have to thank you very kindly for this expression of your good feelings towards me, and I hope I shall be able to fulfil the duties of second to the highly responsible office so worthily and ably occupied by our President.

### ELECTION OF DIRECTORS.

The President appointed Messrs. Morgan, Beall, Little, Drury and Croil as a Committee to nominate directors for the ensuing year. The Association then adjourned during pleasure, to enable the Committee to meet and prepare their list. At the expiration of a short time the Committee presented their report by Mr. Morgan, nominating the following gentlemen :—

Section No.	1	John Croil, Aultsville.
“	2	A. A. Wright, Renfrew.
“	3	D. Nicol, Cataraqui.
“	4	P. C. Dempsey, Trenton.
“	5	Thos. Beall, Lindsay.
“	6	W. E. Wellington, Toronto.
“	7	Jas. Goldie, Guelph.
“	8	A. M. Smith, St. Catharines.
“	9	J. H. Parker, Woodstock.
“	10	A. McD. Allan, Goderich.
“	11	John Little, Fish Creek.
“	12	Hugh Smith, Sarnia.
“	13	Charles Hickling, Barrie.

Auditors, { John Carnegie of Peterborough.  
Charles Drury, M.P.P., Crown Hill.

The report was adopted, and the above named gentlemen were declared elected, after which the Association adjourned until 2.30 p.m. On resuming at that hour, the subject of

### ROADSIDE TREE-PLANTING

was taken up—“What benefits are to be expected therefrom? which are the best kinds of trees to plant? when is the time to plant them?”

Mr. GOLDIE.—I suppose ornament should be the chief consideration in selecting trees for roadside planting. The maple is a very fine tree, suitable for all situations, easily obtained, and hardy; I do not know but the Norway maple is as fine as any; the common sugar maple is an excellent tree also. I am very partial to the elm for a moist loamy soil, where it succeeds best; I think it is one of the handsomest shade trees that can be grown. The linden is also a very fine tree. In planting trees along the roadside the great mistake most people make is in planting them too close. When that is done, the whole beauty of a



tree is destroyed; they are unable to grow naturally, and they grow so close that they have to be pruned away, so that their whole beauty is taken away. I would advocate the planting of trees a considerable distance apart and allowing them to grow so that the natural character of the tree will be preserved. The catalpa is often spoken of, but I am doubtful if that is going to be a success here. If it proves to be perfectly hardy I think it will be a very beautiful tree; but the trouble is that it does not seem to ripen up its wood, so the young shoots are liable to be cut off in winter.

The PRESIDENT.—Do you find that to be the case with the *Speciosa*?

Mr. GOLDIE.—Yes; I cannot get its wood to ripen up before the winter. I intend this winter to take some of them up and plant them out again in the spring. I think, possibly, when they reach a certain age they may stand.

Mr. BEADLE.—I have had the catalpa for three winters, and it has never killed back with me.

The PRESIDENT.—My experience is that the extreme tips show a slight tenderness, but that is all.

Mr. BEADLE.—I must make one exception. I had some yearlings which last September were killed back by the early frost.

Mr. GOLDIE.—I strongly disapprove of planting the different varieties of poplar and willows. They are fast growers, but after you have them they do not amount to much; they are very liable to be attacked by insects, and they often sprout at the roots. Then there is the chestnut, but it has also that one defect that the young plants are liable to be cut off. The tulip tree is one that will stand. But I think that until the people become used to planting by the roadside they will have to try the commoner sorts.

The PRESIDENT.—What distance apart would you recommend?

Mr. GOLDIE.—That would depend a little upon whether shade was wanted for foot paths. In that case they might be planted closer. But for simple country roads, where there are no side paths or sidewalks, I think probably forty or fifty feet apart would be the proper distance. Some people object to having much shade on the roads in the spring, as it keeps the sun from getting at them and leaves them muddy for a considerable time.

Mr. T. H. PARKER, of Woodstock.—I was just going to mention that while the road is kept in a muddy, soft state, owing to too much shade, the wheels of waggons do a great deal of damage to the road.

Mr. ROY.—I think where trees are planted along the roadside they are usually too close altogether. Mr. Goldie thinks they should be forty or fifty feet apart; I think they should not be less than two hundred feet apart. Otherwise they will keep the roads wet and muddy for two or three weeks in the spring and the fall.

Mr. PARKER.—In my opinion that would be rather far apart; but in my district, in some places, the trees are as close as twenty-five or thirty feet.

Mr. ROY.—I think poplar trees, such as the *Abele*, are very poor trees to plant. Of course the maple is always a desirable tree for ornamental purposes, but it would be a good thing, instead of planting all trees of large foliage, to put in some Norway spruces occasionally; more ornamental trees you could not have along a roadside. But planting trees too close destroys the road.

Mr. CROIL.—On the whole, I think forty or fifty feet apart is the proper distance for roadside trees. I agree with Mr. Goldie that the elm is perhaps one of the best to have. It grows very quickly, and makes a very fine shade; the only objection to it is that its roots extend very far and destroy the ground in the neighbourhood for anything else. I suppose when you speak of the maple you include the soft maple, which is a very nice tree. I dare say some gentlemen have tried the Manitoba maple. I got some trees of this variety from Mr. Bucke. They grow remarkably fast and have a beautiful leaf. I think the Manitoba maple would make a very handsome roadside tree.

The PRESIDENT.—The principal objection to the Manitoba maple as a street tree is that it does not grow large enough. When I say that perhaps I am speaking a little too fast. I have seen these trees in the streets of Winnipeg, where they are perhaps ten or fifteen years old, and I would call them very small trees. They require to be planted twenty-five or thirty feet apart, and they have a tendency to branch low. The largest specimen I have seen was about twenty-five feet high. I do not think this tree is so pretty

as our soft maple. It has the disadvantage, they claim out west, of attracting a great many flies.

Mr. PARKER.—Is the linden or basswood not a good tree for a shade tree.

The PRESIDENT.—Yes, I think it is a beautiful tree. Another is the European mountain ash, a very pretty tree, which in some places grows dense enough to form a good shade.

Mr. PARKER.—The basswood would be excellent where there are large quantities of bees kept, because it furnishes a large supply of honey at certain seasons of the year.

Mr. HICKLING.—We have planted a large number of sugar maple trees on our roadside here, and they are doing tolerably well; but we consider the soft maple far superior to the sugar maple; it grows very thriftily, and forms a shade much earlier than the sugar maple. The basswood I consider a superior shade tree, and it can be got very easily from the woods. A large number of trees have been set out in this town and its vicinity, and the town council has authorized its officers to look after tree planting. It has also done something in the way of giving a premium to people who set out trees, if, after a certain time, they are growing and doing well. As regards evergreens, I do not know much about them for street planting; but I think they answer very well to be planted around our farm houses. The spruce especially is a very handsome tree. I think a great deal more might be done in the direction of roadside tree planting in this part of the country than has been done hitherto, and I trust the time will come when we shall see our main leading roads planted for miles with trees.

Mr. ROY.—How close would you put them?

Mr. HICKLING.—I think I would go with Mr. Goldie and say forty or fifty feet apart. There are some places where the trees have grown to a considerable size, and they do shade the road, and in the spring of the year when the snow is going off they leave it in a wet condition for some time. But they are very agreeable in the summer season.

Mr. MORGAN.—Here, the only thing that is planted out to any extent is the soft maple, and it certainly is a very beautiful tree, preferable to the sugar maple, because it grows much more rapidly. It seems to me, however, that we have lost a good deal by not planting alternately trees that grow slowly with those that grow rapidly. For instance, the planting of the poplar alternately with the maple would have a pretty effect. There are two streets in Buffalo which are very beautifully ornamented in that way; the trees were touching all along, but were not interfering with each other to any extent, and looking down the street the appearance of the tall spare poplar rising above the maple trees was one of the prettiest sights I have ever seen. This method secures variety with regularity, the two objects which we have to aim at.

The PRESIDENT.—There are three varieties of maples which should be kept distinct in the mind. There is the western maple, which is a very rapid grower. The soft maple is a much more rapid grower than the sugar maple, and I think a prettier tree; that is the one that bears the red blossom in the spring. The other, which is known in the west as the silver maple, is characterised by whiteness of the foliage on the under side. All of these three varieties are very good for tree planting. Then the Norway maple, mentioned by Mr. Goldie, should not be lost sight of. It is very dense, much more so than any of our maples; but if the western maple is nipped in it grows very dense, perhaps dense enough for a shade tree; however, neither it nor the Norway maple colours in the autumn like our own trees. Mr. Cuppage has handed me this question: "Should these trees be planted on both sides of the road, or only on one side?" If planted on the north side only, the difficulty suggested as to wet roads would be removed, but we should be deprived of one great advantage from trees, that is the advantage of shade. It seems to me, however, that any little inconvenience we may suffer from the moisture of the road in the early spring is made up to us many fold by having nice shady roads to walk and drive over in the hot summer.

Mr. ROY.—How would the sycamore do for roadside planting?

The PRESIDENT.—It is rather delicate. It succeeds in some places in London, but will not do for roadside planting.

Mr. MORGAN.—The width of our roads is such that the shade trees would not keep



them muddy to any appreciable extent. In the country the roads are wide enough as an ordinary thing to permit of the planting of trees on both sides without danger of preventing the roads from drying. To speak of another point, we should gain immeasurably from the planting of trees by the snow lying on the roads evenly. That is a point on which I can speak most feelingly. I drive on the average about eighteen miles a day in winter, and at certain times it is almost impossible to get about if winds have to any extent prevailed; but if I come across a farm where trees are planted, the difference is instantly perceptible—the snow lies evenly on the ground, and travelling is comparatively pleasant, while in other places the snow is banked up to from four to ten feet high, leaving other spots in the road absolutely bare. In some portions of exposed townships, such as Nottawasaga, it is absolutely impossible to travel sometimes for days owing to the state of the roads. On this account great advantage would result from the planting of trees.

The PRESIDENT.—What is your opinion as to the best time for planting?

Mr. MORGAN.—I would plant in the spring, that is, ordinary trees, such as we have been speaking of. If you refer to evergreens, I have planted only very few of them, and know nothing about them. But maples, and hardwood trees generally, I would plant in the spring. I have found them to invariably succeed, while fifty per cent. of those planted in the autumn have failed. I see no reason why it should be so, unless, by moving the tree, you let the frost have greater access to the fine rootlets.

Mr. CROIL.—One consideration in favour of the sugar maple is that in a few years it makes a good return in the shape of maple sugar or syrup. I think we tapped seventy trees and made ten gallons of syrup. The sugar maple grows much more rapidly with us than the soft maple.

Mr. PARKER.—If you tap them very often you will find that in a few years they will be likely to be destroyed.

Mr. CROIL.—They are planted alongside of my own fence. One trouble we have with our trees, even though they are on our own grounds, is that the Telegraph Companies injure them very much.

Mr. CASTON.—My experience is that the sugar maple is by all odds the best shade tree in this country; it is hardy, and it is not difficult to get it to live. I have seen the sugar maple frequently planted out, and I have never known a tree to die. In one part of the country I travelled over, a line of sugar maples were planted last spring and not one died. The calculation is to use them for fence posts to string wires on after a little, and I think when that is accomplished, the place will look very pretty. With regard to tapping the trees for sap, I have had some experience in that, and I do not think it hurts a tree in the least when it reaches ten inches in diameter. A tree gets a tremendous top when growing alone, and will give us five times the quantity of sap that can be obtained from a tree in the woods, and its ability to overgrow any wound made will keep it from rotting. In making maple syrup, men do not make a big gash in the tree with an axe as they used to. They are more careful of the trees in the woods now. They find they can get as much sap by means of a small hole made with an auger.

Mr. CROIL.—Nine-sixteenths of an inch.

Mr. CASTON.—Yes, or seven eighths of an inch, and the maple tree has the ability to overgrow such a wound so as not to receive any injury. A gentleman in our village has a grove of sugar maples, which he taps every spring, and it does not injure the trees in the least. The black ash makes a very nice tree, but I would not ask for anything better than the sugar maple. The grove I speak of is on the grounds of Mr. Arthur Craig, of Craigvale. I know two trees, a red and a soft maple, which are about the same age; I remember when they were not higher than an ordinary fence, and the red maple has outgrown the soft maple and is the prettier of the two. The poplar I do not care for at all. I know a garden where there are a lot of these tall poplars planted, and for the last ten years they have not been able to grow anything in that garden.

Mr. ROY.—In taking maple trees out of the bush to plant, would you plant them as you take them out of the woods or would you stump them off.

Mr. CASTON.—I would stump them; and with regard to speed of growth, if a person would take as much trouble with them as with a fruit tree, and put a little manure about



them, he would get a rapid growth. But they make a wonderful growth by merely planting them in the sod and leaving them to grow.

Mr. DEMPSEY.—If I were going to plant a tree for the amount of saccharine matter I could get from it I would plant basswood, and I would save all the fuel Mr. Croil speaks of by keeping some bees. I think there is no shade tree that we can derive so much profit from as the basswood. Next to that would come the soft maple; it blooms so early in the spring that our colonies of bees build up very rapidly indeed when they begin to gather honey and get a certain amount of pollen from the blooms of these soft maples. They make very pretty shade trees. I think as pretty shade trees as I ever saw in our part of the country were in a basswood grove. The original trees had all been cut away from the clearing except a few basswood trees that were left to grow, and the ground was kept covered with grass. I attended a picnic in this grove, and I can assure you our Sabbath School boys enjoyed a game of football under these trees very much, and I enjoyed half a day looking at them. I think the prettiest shade trees, however, that I have ever seen are the elms which are almost universally planted in the Eastern States. I have seen some trees standing on one side of a roadway which extended to the other side, and it is something very pleasant indeed on a hot day to have the privilege of resting under one of those trees. Such a pleasure is sufficient to pay for the trouble of planting a dozen of these trees. There is a road that I travel over a good deal in the summer which is almost devoid of shade trees, and it is very suffocating sometimes to have to drive for twelve miles along that road without having any shade at all; but towards the end of the journey, as the road approaches the town, there are a few elms standing, the branches of which nearly cover the road, and I have often been very thankful to be able to stand for a minute or two under those weeping elms. I would recommend the soft maple and the elm, and I would not despise the white birch. There is one objection to the hard maple; a borer gets into the tree and cuts his way around it, and the result is a dead top. I planted a number of sugar maple trees some years ago, and I think there is not one in ten living to-day, while I planted some soft maple trees a year or two afterwards and they are all living.

Mr. PARKER.—Is it not an objection to the basswood that it produces suckers about the roots?

Mr. DEMPSEY.—Yes, but that is about the easiest way to propagate basswood—by picking them off and planting them where you want them to grow, and they almost invariably live without roots. The basswood is exceedingly difficult to transplant in the spring; but it is almost absolutely certain to grow if planted in the fall, a little earlier than the present time.

Mr. BUCKE.—Down in Ottawa we are losing a great many maples through the borer, and we find that the elm grows nearly twice as rapidly as the maple and makes a much finer shade. Objection has been made to the planting of trees along the roadside, that they shade the road and keep it in bad condition; but I think we have come to a time in the history of this country when we can afford to gravel or macadamize our roads, and I do not think that should be considered a valid objection to planting shade trees. I am satisfied that farmers who plant shade trees along their roadsides will get an increased price for their farms when they want to sell. I know that people coming out from the Old Country and wanting to buy farms often fix their eyes on a farm that has trees along the roadside. I think there is great advantage, both in beauty and profit, in planting our roadsides with trees.

Mr. MORGAN.—I was told of a certain avenue that Mr. Smith planted some time ago. I want him to describe it, but he won't pay any attention to me. Perhaps he will obey your command, Mr. President. (Laughter.)

Mr. A. M. SMITH.—I did not know that my friend Mr. Morgan would be quite so communicative. The trees were the Mazzard cherry trees. I planted them partly for ornament, and partly from selfish motives. They make a very pretty shade tree, and at the same time serve the purpose of keeping the birds from our better varieties of cherry trees.

The PRESIDENT.—I planted an orchard once, and put in a row of Mazzards, intending to be very liberal to the birds, but I found that they flew from those and attacked

the others. While on my feet I may say that the hard maple is not the only tree that is attacked by borers. There is a borer that attacks the soft maple. It is the larva of a small winged moth, and has caused the death of some trees. It does not bore a large hole in the tree, perhaps not larger than a silver dollar; but several of these insects working together will sometimes succeed in girdling a tree. I mention this to show that the soft maple has its disadvantages as well as other trees. I think the basswood is as free from insect enemies as almost any tree we have. Those who grow elms, especially in the United States, experience a great deal of trouble from insects that devour the leaves—some native and foreign insects, and especially the canker worm. There is scarcely any tree that has not some drawback; but these things we have to put up with.

Mr. STEPHEN.—It may be of some benefit to give my experience of a district that has not yet been touched upon, that is, the city of Toronto. The favourite shade tree there is the horse-chestnut. It does not grow too tall, and it has a very fine top when in foliage; and when in bloom for about two weeks in the spring it presents a very beautiful appearance, and its perfume fills the whole air. The greatest objection to it perhaps is that when the nuts are ripe the boys are likely to injure the tree in getting the nuts down. They cannot eat them because they are bitter, but they like to collect them for playthings. The soft maple is very extensively planted. There are also a good many hard maples, which present a very beautiful contrast to the chestnut when their foliage takes on its brilliant colouring in the fall. The elm is also extensively planted, but the greatest objection to the elm in the streets of Toronto is that the school children strip it of its bark, and then of course it bleeds to death. We have also a number of the Lombardy poplars. They are not a tree that I regard with very much favour for the city, though they would make a very fine avenue in the country. The mountain ash is planted to some extent, and it is a very nice tree; its berries make a very pretty effect. With regard to the distance that trees should be planted apart, the average distance in Toronto is about eighteen feet, which is the limit fixed by the by-law on the subject. That is perhaps rather close, because when the trees reach, say eight or ten years of age, they become a little crowded; then they have to be pruned, and sometimes a tree has to be taken up so as to give the others room. Twenty-five feet apart would be about the right distance for a city. I think it is better to have variety in our shade trees, not too much of one kind. In Toronto the people plant the shade trees at their own expense, but immediately after a tree is planted in front of their property it becomes the property of the corporation. If I should cut a tree after planting it I should be liable to be prosecuted.

Mr. HUGH SMITH.—I am very glad this important subject has been taken up here, and I am glad to hear the hard maple so well advocated. It is certainly the superior maple of the two for general purposes. The black walnut is a very important tree, and probably as a timber tree the best of all. The white ash has not been mentioned; it has a nice top. As to distance, for elms, hard maples, and other large topped trees, forty or fifty feet is the proper distance apart, but there are some smaller trees, such as the blue beech, which might be very successfully used in some cases for roadside planting. The European ash I do not think is hardy enough for all parts of the Province, but it is a fine tree, and it has not the objection that applies to many of our native trees of dropping its leaves early in the fall. In the west we have the buttonwood tree, which makes a very good shade and is very easily planted; but it is of no value after it has done duty as a shade tree, although it is sometimes sawn into boards.

The PRESIDENT.—It is used by the cabinet-makers very much.

Mr. HUGH SMITH.—Yes, but it is a poor, weak wood, and I think I could raise a foot of black walnut about as easily as a foot of it. The tulip tree is too difficult to handle, otherwise it is perfection as a beautiful tree, and a valuable wood when the tree is done with. The junberry is a very handsome tree when it blooms in the spring; it will grow to six inches in diameter. The beech is one of the prettiest ornamental trees we can have, but I am afraid that walking over the roots injures it. I would advocate the extensive planting of the walnut, which is a very valuable tree for timber when it has served its purpose as a shade tree. We should not altogether lose sight of utility when planting shade trees; and in this view, the walnut, the soft maple, and the basswood are all valuable.



Mr. BUCKE.—Would not the nuts be an objection to the walnut? Would not the boys break the trees to get them.

Mr. HUGH SMITH.—No, I think not. The nuts drop off very easily when they get ripe.

Mr. BEADLE.—The tulip tree, which has just been mentioned, is planted to a limited extent in the streets of St. Catharines, and it makes a very pretty shade tree for towns. It is not so extremely umbrageous in its style of growth as some trees, and I think on that account perhaps preferable for towns to some others. The trees are very clean and smooth, and exempt from the attacks of insects to a great extent. The only insect which I have found on it is the larva of the *Papilio Turnus*. The tree is exceedingly attractive in appearance; I have never known any person to examine it but would admire it. I should like to see the tulip tree tried more generally. It is quite hardy in our district.

Mr. ROY.—I have four or five trees of that variety in my grounds, but they have not grown to a greater altitude than twenty-five feet. The tree has a beautiful leaf, of a peculiar form, the upper part being as it were cut off.

### THE CANNING BUSINESS.

"Would a canning factory be likely to pay in this part of the country?" was the next question discussed.

The PRESIDENT.—What would you say as to that, Mr. Morgan?

Mr. MORGAN.—No.

Mr. BEADLE.—Mr. Morgan's answer is perfectly correct, and I will give the reason for it. I understand that you can sell strawberries here for eight cents a quart, and raspberries for from ten to fifteen cents. It is utterly useless to start a canning factory here when you can sell your fresh fruit at those prices. When your fruit comes down to three or five cents a quart, then a canning factory might make some money.

Mr. MORGAN.—That is it exactly.

Mr. ROBINSON.—What is the best price that the canning factories can pay?

Mr. BEADLE.—From three to four cents.

Mr. A. M. SMITH.—The Canning Company paid ten cents a quart this summer in St. Catharines for raspberries, and sometimes for strawberries.

Mr. MORGAN.—There is not a sufficiently large area of fruit here to afford material for a canning factory. I suppose it is true everywhere that supply and demand have a reflex influence one on the other; but anyone who should put up a canning factory here would have to demand a long time before he would get the supply. There is not likely to be a canning factory established in this district on any scale for some time, for we can dispose of all the fruit we can grow here; and my experience is that we could dispose of three times as much as we now grow. I think the possibilities of the growth of small fruit in this section of country are almost boundless. There is nothing that pleases me better than to hear of or see anyone going into fruit-growing. We are fifty years—certainly twenty-five—off the possibility of there being a greater supply than the demand. Each year opens up new markets, and increases the demand in each place. In point of fact, the demand increases in a sort of geometrical ratio, and I do not think a canning factory would pay for some time. An evaporating factory might. Two or three years ago there was a great storm here, and tons of apples rotted and were given to the pigs. I saw that in driving through the country; and if I could have got an evaporating apparatus at that time I would have made good use of it. Farmers told me that immense quantities of apples were then fed to their cattle and pigs, because they could not get rid of them. Fruit that is slightly worm-eaten ought not to be brought to market, and as each year passes on it will be less likely to be received in the market, and that kind of fruit evaporates as well as anything else.

Mr. ROBINSON.—I think the last gentleman may be mistaken in his estimate as to the time required to make the supply reach the demand. I remember some years ago strawberries were from a York shilling to twenty-five cents a quart, but when they came to be more generally grown I saw people hawking them about for from six to seven cents.

Mr. BUCKE.—Canning factories do not depend entirely upon fruit. Tomatoes are



very largely canned. I think people ought to consider also the large demand that will arise for canned fruits as the North-West fills up. It appears to me that canning factories in Ontario must certainly be on the increase.

Mr. CASTON.—I am very glad to hear Mr. Morgan's statement that there is not likely to be any glut in the market for some years to come. He is the pioneer of the strawberry business in this county. But I believe a canning factory will, in the future, be one of the institutions of this county, because I believe that small fruits are going to engage the attention of farmers more generally when they get their eyes open. I think a canning factory would be a grand institution at any time that there should be a glut in the market; but, as Mr. Morgan says, there is no need to apprehend that for years to come. One gentleman spoke of the North-West. I was there in the spring of 1882, and I paid thirty-five cents for a small basket of strawberries; I do not think there was a pint in it, and they were more than half rotten. If fruit is so scarce as that in the North-West, I think it will give us a good market. I had also to pay five cents for a Northern Spy apple, and ten cents a pound for seedlings that we would not think worth picking up. With regard to evaporators, there is a kind made now which I think would enable each farmer to have one of his own; and they would be very useful here, where we are subject to equinoctial gales that play havoc with our orchards.

### MARKETING OF SMALL FRUITS.

The next discussion was on "The marketing of small fruits—what are the best packages; the best methods of packing; means of transportation, and best markets?"

Mr. A. M. SMITH.—I can hardly afford to compete with everybody else and give a heaped up quart of berries, and have them ship theirs in pint-and-a-half baskets. I use the ordinary baskets, and I use ordinary board crates; but for a great deal of my fruit I use what is called the basket crate, holding twenty-four quarts, or the small baskets which are called quarts. These crates can be obtained for about \$12 a hundred, and there is this advantage in using them, that if you lose a crate it is not a very great loss. The great trouble in marketing small fruits is to get your crates returned, particularly if you ship to distant markets. We find that these small packages will often sell to great advantage, as they contain just enough for family use. They come in very handy, too, when you have a choice sample of fruit, but have not enough to fill a crate; and buyers, when fruit is high, will often pay more for a sample crate of twenty-four quarts than they would if obliged to buy a large crate of sixty quarts. In this way we often get a little better price for the basket crates than for the larger ones. They ship very well by express. They are covered by a thin board cover, so that you can set one on top of another. In regard to the best means of transportation, if you are not near enough to your market to take your fruit yourself in a spring waggon, or if you cannot ship by water, you should send it by express, so as to get it to market as soon as possible after it is picked. But in our section, where large quantities of fruit are grown, we have a good deal of trouble in shipping by express, because the express agents are not very careful in handling the fruit; and as the express trains do not stop very long at a station the fruit is often hurriedly thrown off, one crate on top of another, so that it reaches its destination in rather poor shape. I think there should be a combination of fruit growers to devise means for better methods of shipping fruits—perhaps to induce our railway companies to run regular fruit cars, as they do in some sections of the United States. The express company has a monopoly of the fruit-carrying business in Canada, and it is often a difficult matter, particularly in seasons when we have a large crop of fruit, to get it to market in good shape. The best markets are sometimes a difficult thing to determine. For small fruits Toronto and London are my principal markets. Toronto is the best market for me, because I am within ten minutes' drive of a boat that will land my fruit in Toronto without any shaking up. I have a man at the wharf to receive it, and I usually get a fair price for it. When the market is crowded in Toronto I ship to London, which is a very good market for small fruits, particularly strawberries. I have no doubt that fruit growers in this vicinity find some of the small towns around here preferable to these larger markets.

Mr. MORGAN.—Does it pay to separate the different varieties of strawberries?

Mr. A. M. SMITH.—It does in some markets.

Mr. MORGAN.—The Crescent and Wilson, for instance?

Mr. A. M. SMITH.—Not the Crescent and Wilson perhaps, but the Crescent and Sharpless, or the Crescent and Bidwell, or some of the larger and finer varieties. You can always get a fancy price for fancy fruit in such a market as Toronto.

Mr. ROBINSON.—Selling one's own fruit in one's own market, and shipping to a distant market, are different things and require different treatment. Has any gentleman tried going to the city market and handling his fruit himself, and having some trusty person at home to ship it to him?

Mr. A. M. SMITH.—I think I can tell you just about how that would work. In all these large cities there are commission men who, when they see a stranger come in with a lot of fruit, stand back and say, "He has to sell it at some price; we will just wait." There is a ring among the commission men in these large cities who act together in that way. The fruit growers of the Niagara district, having a great deal of trouble in disposing of their fruit satisfactorily through these men, got together and formed a joint stock company, and we have since employed an agent of our own and put him in Toronto, and another one we put in London. We consign our fruit to them, and they sell it and deposit the money in a bank to our credit. That we think the safest way of disposing of our surplus fruit. We require our own agent to give security.

The PRESIDENT.—Do you get as good a price in that way as under the old system?

Mr. A. M. SMITH.—At first we had some trouble in getting a good agent. These commission men tried at first to crowd our man out of the market; but we persevered, and people got to understand who he was, and that in getting fruit from him they were getting it directly from the growers, and they commenced to patronize him. The consequence has been that this year our business has increased very much, and our man has had all he could do. We pay our agent a salary. We also sell on commission for other parties through our agent, charging the same commission as any one else, and dividing the proceeds.

Mr. ROBINSON.—We tried grading our berries for the local market. We put in two rows instead of three, and heaped up the boxes; but we have had to go back to the old system. I do not think it pays to grade your fruit for the home market, but I think it does for the city market.

Mr. BEADLE.—I have had very little experience in this matter. One fact, however, I can give you—that these city markets are as liable to fluctuation as any other market. You can go to Toronto sometimes and buy fruit cheaper than you can in St. Catharines, and a man makes a great mistake who overlooks and neglects the markets around himself, and ships wholly to the distant cities.

Mr. LITTLE.—That is the experience of all fruit men I am acquainted with either in Canada or the United States—that you should seek to develop the home markets that are within five or ten miles all about you.

Mr. DEMPSEY.—Our market is Montreal principally. It is true we sell considerable in Belleville, but the Belleville market is usually overstocked. With regard to packages, we tried the baskets which Mr. Smith recommends, but we found that they would not suit the Montreal market. People did not like them; they claimed that the baskets got packed too tightly together, and that most of the berries arrived in Montreal in a crushed state. Then we tried a cheaply made box, similar to what is used in Michigan. It is a box made of veneering nailed together, and calculated to hold two dozen small boxes of berries; and those boxes did not suit them, from the fact that most of the berries are sold on the train by the commission men, and they must open every package. People insist on seeing the fruit before they buy it. The case we prefer holds thirty-six quarts, so arranged that the baskets will admit of being heaped up. We generally put an imperial quart of berries into each basket by heaping them up. We then put in a lining that holds the baskets close together, with slats that admit of the baskets remaining heaped up. The lid is slatted in the same way, so that when it is closed down the baskets are closely packed, and yet the berries are not pressed. We find that our berries packed in that way command a cent a quart more in the Montreal market than those packed in



any other way. We have brought the size of our packages down, from seventy-two to fifty-four quarts at first, and now to thirty-six quarts.

Mr. MORGAN.—What arrangement do you make of the boxes to get thirty-six?

Mr. DEMPSEY.—Three tiers of twelve each. With respect to shipping, we ship invariably by express, and by arrangement with the Express Company we have the privilege of placing these cases on the train. They usually allow us to detain the train ten minutes at Trenton to load our berries, but they will not wait half a minute after the time has expired. We place the boxes on the train and they are not touched until they arrive in Montreal, when our own commission men take them off; so that our berries arrive in almost as good condition as when they leave us. To make sure that everything was properly done, I slipped down to Montreal on the sly, and watched our berries as they went down. In the season when the berries are most abundant the Express Company usually furnish us with a car that runs one day from Montreal to bring our empty cases back, and goes down the next day with our berries, so that they have only to hook the car on to the express train when it passes Trenton; we load it up during the day while it is standing on the siding.

Mr. CASTON.—What is the cost of the crate that holds thirty-six quarts?

Mr. DEMPSEY.—I think about forty-five cents.

Mr. A. M. SMITH.—Have you any trouble in getting them returned?

Mr. DEMPSEY.—No. We did at one time, but we do not now.

Mr. A. M. SMITH.—The Express Company are willing to return the crates free, but the great difficulty is to get the dealers to return them.

Mr. DEMPSEY.—We have one difficulty. The linings of our cases are generally lost, and we sometimes get linings that do not fit. We provide for that by getting a large surplus of linings made, so that there will be no danger of our running short. They are made of pine wood, a quarter of an inch thick.

Mr. BUCKE.—How thick is the box made?

Mr. DEMPSEY.—The bottom three-eighths of an inch, the sides three-eighths, the top five-eighths, and the ends three-fourths. The box is bound at each end with light hoop iron.

Mr. MORGAN.—I should like to know what kind of basket is generally employed, or is believed to be the best. We got some of the Disboro baskets from Buffalo, but they were a nuisance, not on account of their size, but because we could not pack them into the crate; they were so wide that we could not get eighteen into a layer. We use the old style of crate, made out of pine, that holds fifty-four baskets. We make the crates ourselves; they cost about sixty cents each, complete. The trouble of getting them back is very great; but we have at last hit upon a plan which is very successful, although it involves a considerable amount of labour. We keep a daily record of the crates, which are all numbered on the outside, so that we know where every crate is. Then we tell our customers that the crates are worth a dollar each, and that they are sent to them on condition that they shall pay a dollar for every crate not returned. Even with these precautions we have lost some crates, and we have not thought it prudent to enforce the rule; but our plan results in bringing the crates back to us very promptly. I cannot urge too strongly the necessity of cultivating the home markets. The year before last our crop of strawberries was about 22,000 quarts, and next year, under similar conditions, it will be 50,000 quarts or more; and I am certain we shall not send any to Toronto unless perhaps the very large ones. I said a few moments ago that I thought it would be well to discriminate as to size. I say so because dealers have at different times offered me various prices as high as twenty-five or thirty cents a quart for choice berries; but even then we have not sent them just because we prefer to command the market north of Toronto; and we find as a general thing, when we come into competition with berries from Toronto or from beyond that point, that we can command the market largely, because we can supply berries which have been freshly picked and not handled much. That is after all the main point, I think; and that is where, in supplying the local market, local growers have such an advantage over those from a distance. As to heaping the baskets, that is easily done, but it depends on the way the slats separating them are made. We have simply three slats, rather wide, and three-eighths of an inch thick, for the baskets to sit upon. The



cover has similar pieces attached to it, so that when it is shut down they fit exactly where the strawberry baskets join. I think you could take a crate packed in this way and throw it about considerably without removing the boxes. The slats are made with three-eighths of an inch pieces and one-eighth pieces. We fill up right over the edges of the basket, and we can give you good measure in that way. There are two matters that I feel the importance of. Mr. Smith has indicated one, and that is that we should have some more accommodating mode of transportation than we have at present. We are absolutely at the mercy of the Express Company. Then, I cannot help thinking that if the Fruit Growers' Association took a united stand on the question of the tariff, they would be able to do something. I have tried in vain to obtain the slightest reduction on this line. This year, on that very account, we have shipped largely by freight, and the dealers say that where we can reach them in a reasonable time, the berries are just as good sent that way, as those sent by express. As to separating the varieties, I am very glad to hear it is not important. We have not done so, and we find it almost impossible to do so. When you get in 3,000 quarts in one day, and have to arrange to send them away, it is rather difficult to keep the varieties separate.

Mr. CASTON.—What are the dimensions of those packages?

Mr. McVITTIE.—Two feet nine inches long, eleven inches wide, and eleven inches high.

Mr. ROBINSON.—How do you fasten your crates?

Mr. MORGAN.—Hitherto only by the patent fasteners; but we have begun putting the screw in.

#### GRAPES FOR THE COUNTY OF SIMCOE.

The next subject taken up was, "What grapes can be successfully grown and ripened in the County of Simcoe, on what soil should they be planted, what aspects are to be preferred, what cultivation should they receive; should they be protected in winter?"

Mr. CASTON.—I am just a beginner in grape culture, and my experience of that industry in this district is therefore limited. My vines are very young, but they are doing very well, though I have only a few bunches of grapes from them this year. I have seven or eight varieties. The principal one is the Concord; then I have two or three of Rogers' Hybrids, the Early Victor, Moore's Early, the Vergennes, the Worden, the Brighton, and the Champion. I have only one vine of the Champion, and I do not want any more. As to what varieties can be successfully grown, that can best be answered by Mr. Hickling, who has been in the business for a long time. I have not fruited any grapes yet to any extent but the Champion and the Brighton. The latter I do not find a very great grower or cropper so far. It ripened very well one year, but another year it was cut by the fall frost. My soil, being a warm, sandy loam, I should say would be very suitable for grapes, with proper manuring; but I am satisfied that grape vines to grow successfully in this district will have to be covered in winter. I cover mine with straw, and let snow fall on top of the straw. I have never had any trouble from mice. The grape vines left on the trellises have killed back to the very roots. Sometimes, in spite of the weather prophets, we have a very cold dip here; the thermometer has been known to go down 33 degrees below zero. As to varieties, the variety that will ripen the earliest is the best for this county. Early frosts, which I suppose are not encountered so much in other parts of the country, sometimes in this county kill off the vines before the fruit is ripe; so that the earlier we can get our grapes to ripen the better. With regard to trellising, I intend to use a trellis which was suggested by some person, I think in the *Horticulturist*. He says he lays scantling along the ground, and places slats on them, and in the fall of the year he takes the props away and lays the vines down on these slats, and then covers them with straw; then, when the snow goes off, he raises the vines up and puts in the props, and the vines are in the same position in which they were before.

Mr. HICKLING.—My experience in grape growing is not large. Still, I have endeavoured to raise a few grapes. I have perhaps twelve different varieties, including three or four vines of the Burnet, some of Moore's Early, some of Roger's, the Concord, the Brighton, and some others which I cannot think of at the moment. My plan is to always cut the vines back to about two branches, and to lay them down and cover them in winter.

I used to cover them with straw, but I began to be afraid of mice, and last winter I laid sods on the vines, and then covered them over with earth. They have not been damaged in any way by mice, and they are thriving as well as it is possible for vines to thrive. They are growing well, and those that are bearing are producing very good grapes. With proper care I think we can grow grapes here successfully unless in such exceptional seasons as the one we had last year. We can always command a good price for them—from ten to twelve cents a pound. I would advise those who have not yet raised any grapes to try a few vines, and see what they can do in this part of the country.

The PRESIDENT.—Have all the varieties ripened this year?

Mr. HICKLING.—Yes, the whole of them have ripened. The Brighton is only now turning, but I think a few days will ripen it up nicely.

Mr. CUPPAGE.—I find pea straw a much better material than grain straw for covering grape vines. It attracts moisture, and therefore becomes heavy and keeps its place better.

Mr. CASTON.—It would not be so liable to be blown away either.

Mr. HICKLING.—It was pea straw that I tried in the first place.

Mr. HARRIS.—I am only growing three or four vines. I have not laid them down in any way, and the frost has not affected them. I have the Concord, the Prentiss, and two other varieties. I am living on a hill, which may account for the fact that the frost does not affect my vines so much as it does those growing in valleys. I cut back the new wood to about three buds.

Mr. CASTON.—Do you pinch the ends of the vines in order to ripen up the wood?

Mr. HARRIS.—Yes, and I think it is important not to let the tops grow too much, in order to make the wood larger and more hardy.

A MEMBER.—When do you uncover the vines, Mr. Hickling?

Mr. HICKLING.—Not before the first of May.

Mr. ROY.—My custom is to prune the vines in the fall and lay them down without putting anything on them at all, except a little wood to keep them down, and as we have plenty of snow that is all the protection they need. The Concord is the earliest variety I can grow. The Massasoit is almost as early. The Agawam ripens pretty well, and I consider it one of the best flavoured grapes we have. I also ripen the Lindley, the Wilder, and the Delaware.

Mr. CROIL.—In the matter of grapes I think we, in Stormont, are pretty much on a par with our friends here, and I have come to the conclusion that ripening grapes is a very precarious business with us. But when Mr. Harris is able to ripen them without covering in a county where the thermometer goes down to 38 below zero, I think I shall have to reconsider my conclusion. I do not think we have the temperature quite so low as that, but I have frequently seen it down to 25. We cover our grapes with a slight covering of earth. As your vines grow older you will find it more difficult to turn them down. Some of our vines are hardy and early enough. The Champion is the earliest. The Hartford I am very fond of; it has been much abused, but I never knew a man who got a bunch of Hartford grapes that did not want another; and it always ripens. The Delaware ripens always, I may say, but it has not succeeded very well with us lately; we do not get as good bunches as we used to.

Mr. BEADLE.—Give the vines some wood ashes and they will do better.

Mr. CROIL.—I will try that. The Massasoit is a beautiful grape, and it ripens about the time of Moore's Early. The Jessica I have, but it has not fruited yet.

The Association adjourned at 6 o'clock until 7.30. On resuming at that hour—

Mr. BEADLE.—If nobody has tried the Lindley in this district I would recommend that it be given a trial. It ripens with the Concord, or very little before it, and is a very valuable grape. In my opinion it is the best of Rogers' hybrids; but for some reason or other the men with hobbies have not taken it up. The Salem was taken up by some who fell desperately in love with it, and it was disseminated very widely, but it has been found to be very subject to mildew in many localities and to ripen unevenly. I would not advise anyone to try it here.

The PRESIDENT.—Mr. Hickling has grown the Salem and ripened it.

Mr. BEADLE.—If anyone wishes to try it I shall not say a word in objection, but I



have not found it to succeed well about St. Catharines. I spoke last night of the Massasoit as another Rogers' grape which I would try here, because of its early ripening. Its quality is almost as good as that of the Agawam, which is saying pretty nearly as much as you can say of a Rogers hybrid grape. The Wilder is a favourite grape with many, and ripens about the same time as the Concord—a little after the Concord with us, I think—and I do not see why it should not ripen here. It is a very showy, large black grape, and grows in good bunches. Indeed the grapes look a good deal like plums. I know a gentleman at Hamilton who grows grapes for market, and the Wilder is his favourite grape. He takes pains to thin out the bunches and to put a wire around the vine in order to stop the downward flow of the sap and to promote the growth of the berries. So, he gets twenty or twenty-five cents a pound for his grapes, whereas, if he left them to their natural growth, he would not get perhaps more than fifteen cents a pound. That plan, however, deteriorates their quality—makes them insipid. The truth is that by checking the downward flow of the sap the berry becomes filled with water, and its flavour cannot be so good because it is diluted. I was glad to hear some gentleman say that he had ripened the Brighton at Craigvale, twelve miles north of this. If it ripened there I should say that Barrie would be a good location for it. You have some very good locations about here for growing grapes, well sheltered from bleak winds, and the soil I should think was well adapted to grape culture. The slopes of your hills look to me to be well drained; I have not seen any that appear to be springy, and consequently wet and cold. So I believe you have a favourable location. With regard to the Brighton, I would only emphasize what I said last night, that you will all be pleased with it as a well flavoured, pleasant grape. The Worden will ripen a little earlier than the Concord, and it may be to your advantage to try it a little more than it has been tried. I would also recommend you to try the Linden when it comes into market. I was surprised with it when I first tasted it; I supposed I was eating the Concord, and if you like the Concord I think you will like this, and it ripens fully two weeks earlier than the Concord. It comes just after Moore's Early.

Mr. CROIL.—How about the Hartford?

Mr. BEADLE.—The Hartford is one of the grapes I do not know what to make of. In some years it ripens early, and in other years the Concord will catch up to it. I see that Mr. Croil likes the Hartford. I do not. It is an unpleasant grape to my taste, and I can get other grapes that I like better, for instance the Brighton, and that ripens before the Hartford. The little Delaware ripens about as early as the Hartford with me. My soil is a sandy loam; perhaps on clay soil the Hartford would do better.

Mr. CROIL.—Ours is inclined to clay.

Mr. BEADLE.—The Delaware I believe would ripen here. I presume you are all acquainted with it. The only point to be specially remembered in connection with the Delaware is that it is very apt to be overloaded. The vine is not of that strong constitution that can bring to perfection a heavy load of fruit. If you let it overload, its fruit will not get ripe enough to show its true flavour. You have to thin it out; and do not be afraid to thin it—do not leave over two bunches on a branch.

Mr. SPOTTON.—I know that the Delaware ripens very well here. Where I was living sometime ago the Delaware was growing and yielded some very fine flavoured fruit.

Mr. BEADLE.—I am troubled with the Burnet. I cannot get such bunches on my vines as I have seen here. I think it must be somewhat fastidious about soils.

Mr. CROIL.—I rooted out my two vines, as they were good for nothing. They produced small worthless berries.

The PRESIDENT.—My vines, while young, produced those small berries; but when they got older they got over that habit, and they now produce berries of very fair size.

Mr. PARKER.—I have a vine that I got from the Association, and it produces just such small berries as Mr. Croil speaks of.

Mr. BUCKE.—The Burnet grows very well with me.

Mr. BEADLE.—I must admit being disappointed in the Lady. I thought it was free from foxiness, and had a delicious flavour; but it is not. I found the vine of feeble constitution, and very slow in growing; but now that it bears fruit, I do not consider it a bit better than the Martha, although it is earlier, and it is almost as strong of that foxy



flavour as the Martha. To some persons that flavour is not objectionable ; if not, they will probably find that the Lady will ripen here. The Martha ripens a little before the Concord in my grounds. It is a small berry, averaging a little larger than the Clinton, in medium sized bunches. I think the vine is one of a good, strong, healthy constitution ; I have not seen the least sign of mildew about it. The berries do not ripen quite so early as those of the Lady.

MR. BUCKE.—How about the Croton ?

MR. BEADLE.—It mildewed with me, and all the vines died. I think the Martha would ripen here. It is a little musky in flavor, but if you do not dislike that, you will find it sweet. The next on my list is Moore's Early. I think it is worth trying, although it is no better than the Concord ; it ripens a long time before the Concord, however. I found the vine hardy enough to live through that terrible winter we had a year ago last winter, when so many grape vines were destroyed ; but a neighbour of mine lost about a hundred vines of it. I believe it is no more liable to be killed than the Concord. The Pocklington I do not think you will make a success of here. It is a late grape with me, although some persons insist that it is early. I believe it would be too late for this climate. I doubt whether the Prentiss would ripen here. I would not throw it away if I had a vine, but I would not pay a big price in order to get one. The Duchess is a white grape which I think ripens a little earlier than the Prentiss. I say so with some hesitation, however, because both of my vines of that variety are young. The Duchess reminds me a good deal of the Sweetwater in the berry and the bunch, and I think it may perhaps be a seedling of the Sweetwater. If that is true, we may probably find that the vine will be subject to mildew ; but in point of quality I prefer the Duchess to any other white grape ripening in its season. Still, I am afraid we are not going to make a success of it in our neighbourhood. The Worden you are trying here, and I think you know as much about it as I can tell you. The Amber Queen I have not fruited, and I have had contradictory reports about it. William C. Barry, son of Mr. Patrick Barry, nurseryman, of Rochester, speaks favourably of it ; but how early it is I do not know. They say it resembles the Brighton in many respects. The Ann Arbor is another new variety which I have not fruited yet.

MR. LITTLE.—I got it last spring from a certain gentleman, and I wrote to him lately asking him what I should do with it. "Well," he said, "the best thing you can do with it is to put it into a flower pot and bring it inside in the winter time."

MR. BEADLE.—It was originated in Michigan by a man named Woodruff. The August Giant, I fancy, is a rather coarse, worthless grape. I spoke of the Early Victor last night. I have seen samples of it here, so that I presume you have been able to form your own opinion of it. It is a small grape, but ripens early and crops enormously! The Jefferson I have not fruited. Mr. Dempsey brought some here on exhibition. I would ask him what he thinks of it.

MR. DEMPSEY.—I would not plant any more of the Jefferson. This is the first year that I have had any fruit from it. It may do better when the vine gets older. I would not like to decide either in its favour or against it yet.

MR. BEADLE.—The next grape on my list is the Jessica, which originated in my neighbourhood, and on account of its high quality I thought it worthy of dissemination. It is on trial—that is all I can say of it. I am very fond of it, and I never saw any person who tasted the fruit that did not like it. To what extent it will thrive up here I cannot tell. The only person who has any considerable number of vines of it is William Reid of Port Dalhousie, and he says he has no difficulty in getting from ten to twelve cents a pound for all he can raise. I would ask Mr. Dempsey if he has tried the Lady Washington.

MR. DEMPSEY.—It is very inferior in size of berry, because it mildewed last year. This year there was no mildew on the berry, but there was on the foliage.

MR. BEADLE.—My impression is that neither the Jefferson nor the Lady Washington will ripen here.

A MEMBER.—The Iona is on exhibition.

MR. BEADLE.—If they can ripen the Iona here they can take the whole list of grapes, because the Iona is the last grape that ripens with us, unless it be the Catawba.

MR. GOLDIE.—I would like to ask Mr. Beadle if he has experimented in letting grape vines grow freely instead of trimming them. Mr. De Courtney used to lay down a rule that all out-door grapes did better if they were allowed full scope to grow, than they would if they were put in too closely.

MR. BEADLE.—I have experimented enough to come to this conclusion that it is a mistake to prune our native grapes as much as we prune our exotic grapes, that they will not bear such close pruning. On the other hand, I believe it is as great an error not to prune them at all. I have allowed the Isabella to grow up into a tree in order to make a sort of arbor of it; and I have to admit that I never got better grapes from the Isabella than I got from that vine; I had to climb up a ladder to get the berries.

MR. GOLDIE.—In New York city I was asked to go to see an Isabella vine. It was eight or nine feet high on the trellis, and covered a space as large as this room—about 25x35 feet, and it was loaded with grapes to the extent of hundreds of pounds. I think that wherever the Isabella grows you will have better results by letting it run—not without pruning, but without pruning it so closely as is commonly done. I think some of the grapes of that class will ripen up their fruit much more evenly and will yield a larger crop by that system.

MR. BUCKE.—If it is found that the wood dies on the trellis in this locality, I would advise all people to cover their vines in winter; I am perfectly certain that they will be well repaid for their trouble. In the fall of the year the vines should be pruned pretty short and cut free from the trellis. The best material for a trellis is cedar posts and No. 13 galvanized wire. As winter begins to close in, or about the time of the first frost, it is a good plan for two people to go to work, one with a digging fork to press the vines down, and another with a spade to throw some earth upon them. In this way two men will cover several hundred vines in a day. It is not necessary to put much earth on the vines, and this will be found to be the very best protection against frost that can be used, especially in a climate like that of this district, where the snow does not lie as it does with us. Earth is much better for a covering than straw, as it is altogether probable the straw would blow off. It is only necessary to have sufficient earth to cover your vines, and they will be sure to come out in good condition in the spring. About the third or the last week in April is the proper time to uncover them. As they do not start out in leaf much before the middle of May, they will escape the customary early frosts. I am perfectly certain that any person who once tries covering his vines with earth will continue the practice. Of course a southern exposure insures a greater amount of sunshine, and if the vines are well covered in winter the sun will not strike them so as to injure them. If the Brighton can be grown here I think you can grow almost any grape. It ripens about the same time as the Concord, or it may be a little earlier. If you can grow the Concord you can grow almost anything, except the Iona and the Isabella. I would recommend the Champion, Moore's Early, the Victor, the Amber Queen, and the Brighton. The Amber Queen is a little larger than the Delaware, though it does not set its fruit so closely, and it is the earliest ripening red grape we have in Ottawa. I cannot speak with certainty as to its bearing qualities, as my vine has only fruited a couple of years; but I do not think it is as heavy a bearer as the Brighton. But it is one of the nicest grapes we have, and if it will grow here, I would advise you to have it. Even before it is ripe it is eatable. I consider the Brighton for a general purpose grape the best any person can grow. It fruits very heavily, and is of good vigorous growth.

MR. ROBINSON.—I think as we go north we shall find a great variation in the relative time of ripening of most varieties of grapes. I was surprised to hear several gentlemen speak of some of the Rogers varieties ripening with the Concord, or later than the Concord. With me they ripen rather earlier; even Rogers No. 4 ripens earlier than the Concord with us in Owen Sound. So does the Agawam. In some seasons the Concord succeeds in ripening, and sometimes it does not. The Massasoit with us ripens nearly as early as the Champion, and the Lindley is only about three days behind the Massasoit. If the Lindley had only the persistent thrip and mildew-proof foliage of our native grapes, I should regard it as the best black grape on the whole list. The berries of the Massasoit are a little larger, but I do not like it so well. The Concord is rather late for us. We



prefer the Worden and Moore's Early. The Worden does not begin to colour as soon as the Concord, but it is ripe as soon as it does colour; the Concord takes a longer time in ripening. In some seasons the Worden is nearly two weeks earlier than the Concord in ripening, and in other seasons nearly a year, for the Concord does not ripen at all. My Concord was not at all ripe when I came away, and I suppose they will not ripen this season, while the Worden began to ripen two weeks ago. It is a larger grape than the Concord, and I like its quality better. Moore's Early with us begins to colour a week or ten days before the Worden, but it takes a longer time to ripen, perhaps as long as the Concord; it is not fit to eat for some time after it turns black, while the Worden, when it becomes dark red, is just beginning to ripen. I put the Worden ahead, just because, while it is not more than three days behind Moore's Early, it is superior in quality and a much better grower and bearer. The Lady has been spoken of. I have fruited it two or three seasons, and I like it very much; it ripens nearly as early as the Champion, but it is foxy, like the Concord. I have the Pocklington, but it was not ripe when I came away. The Niagara has fruited with me for the second season, and I am very much pleased with it. It was cut with the frost, as were all of our grapes this year, but it ripened with the Worden. Spring frosts are our bane about Owen Sound. There is a gentleman at Owen Sound who has had a great success in growing his grapes on a stone pile. He has stoned his piece of land, and has thrown the boulders in a heap, and he has planted his grape vines about ten feet apart on each side of this stone pile. The land slopes slightly to the north; and on that stone pile the Agawam and the Lindley, and the Massasoit and the Delaware and the Eumelan are immense. He does not protect his vines in any way, but just prunes them and leaves them. I suppose our climate in Owen Sound is peculiar. We do not find it necessary to cover our grape vines; it is sufficient to throw them on the ground, although mine generally remain on the trellis. I have not fruited the Early Victor. I have seen it fruited, but I am not satisfied with it; it is rather small. The Jefferson has not fruited with me, and I find it a little tender in winter.

Mr. DEMPSEY.—The Jefferson, in my experience, is a poor grower; when I showed it, I showed it in its purity, just as I had grown it; I only brought one bunch, and I only left two; so that people will admit that I was exceedingly liberal in bringing one-third of all I had. There are several varieties of grapes which I think would succeed here, judging by what has been done in this section of the country. I was never more astonished in my life than I was a short time ago, when I visited Mr. Graham's grounds in Ottawa. I expected to visit a place where it was not possible to grow any but the very earliest varieties, but to my surprise some of the varieties which I could not ripen successfully I found on Mr. Graham's grounds perfectly ripe, and that in the month of September. I concluded that not merely latitude, but soil as well, had a great deal to do with the maturing of grapes. Mr. Graham's soil is a sort of shaley or slaty soil, with a southern aspect. The place where I succeeded in ripening grapes earliest has an eastern aspect and is fairly protected from the north. Some varieties of grapes have matured very early in that locality, while other varieties have failed. One of the latter is the Concord. On that slope it is generally behind the Burnet, considerably so this year, and the berries are not much larger than ordinary Delawares.

Mr. ALLEN.—Do you not think the Concord is running out?

Mr. DEMPSEY.—I never was a great friend of the Concord, but when it is well ripened it is a very good grape, and it is so much cultivated that I do not like to oppose it. The Champion has been a very profitable grape with me this year. When it was ripe I said to my son, who does the marketing, "I want you to cut these Champion grapes and take them to market." "Champion grapes! Do you suppose people are fools enough to buy these things?" "Never mind," I said, "take them along." He took them, and he sold them wholesale for twelve and a half cents a pound; and all he had to say was, "I am glad I didn't have to eat them."

Mr. SPOTTON.—How do you account for the fact that people buy them?

Mr. DEMPSEY.—People buy grapes just as they do calico—from the appearance.

Mr. A. M. SMITH.—Do they ever buy them a second time?

Mr. DEMPSEY.—Oh yes. Those parties buy them to sell again, you know. Any



person who likes the Champion and wants a grape that follows close after it, cannot do better than to take the Hartford, which is a little better in quality. It brings nearly as much as the Champion on account of its earliness in ripening.

Mr. BUCKE.—Isn't Moore's Early earlier than the Hartford?

Mr. DEMPSEY.—Not with me. I do not think very much of Moore's Early. I planted half a dozen vines of that variety, and at the same time fifty vines of the Worden; and three of the Worden vines produce more grapes than the six vines of Moore's Early. The Lady ripens with Moore's Early, but does not produce any more fruit, and neither produces a sufficient quantity of fruit to make it an object to cultivate them. The Brighton is a decided success; it produces a beautiful berry, and the flavour is such as I am sure no person would object to. But you should avoid getting it too ripe; when it is a little on the green side it is better, being quite sprightly in flavour. I do not think any one can commend the Brighton too highly. It sets well every year, matures well, and ripens well, and if marketed immediately it brings fancy prices. The Lindley is a profitable grape with me. It produces fine bunches, is a good grower, and its fruit matures sufficiently early—along with the Brighton—with us. I think it would grow here. I have an Agawam vine that occupies about fifty feet of the trellis, and we usually pick about two bushels of grapes from that one vine each year. It will not apparently bear to be cut away so much as some other varieties. We have to give it plenty of space and allow it to make a great deal of new wood, and in pruning it we cut away the old wood chiefly. It mildews a little, but very little, and sulphur applied early in the season protects it from mildew. We have not had mildew on it for two or three years. The Delaware with us almost fills the bill. We thin it a little, and then it produces very fine, close bunches, and the berries are much larger than it produces when not thinned—I think twice as large—and they ripen early, long before the Concord, and almost with the Worden. The difference in time of ripening between the Worden and the Concord is a good deal greater with me than it is with Mr. Beadle. I think any person who is able to give grape culture a little care and attention is likely to be more satisfied with cultivating the Delaware than with cultivating almost any other variety. The Rochester and the Monroe are two very good grapes which I think would mature their fruit in this district. Perhaps my system of trellising would not be a disadvantage here. We set our posts twenty-four feet apart. Our grapes are planted twelve feet apart, and the rows twelve feet apart, and the posts are set out alternately. We string two wires on the posts, one five feet, and the other two and a half feet from the ground, and we train a new shoot to run along each wire; then we allow the shoots that come out from the present year's wood to hang down, and they grow towards the ground. This seems to prevent too great a growth of the plant and it does away to a certain extent with the necessity of pinching, and I find that where the vine is hanging down we get better bunches than we do when it is trained upward or horizontal.

Mr. PARKER.—I want to offer a word of warning to any gentlemen who may now be growing grapes under glass, or who may contemplate doing so hereafter, to never burn sulphur in order to get rid of mildew. You may think this a superfluous warning, but Mr. Rykert, a few weeks ago, almost completely destroyed his entire crop by burning a small piece of sulphur in order to kill the thrip and a little mildew. About three years ago I completely destroyed the foliage of my vines by burning a small quantity of sulphur in my vinery. The next morning the leaves were all shrivelled up as if they had been touched by a severe frost. I have never seen this warning given in any publication, and it may be the means of saving some one's grapes at a future time.

## THE ONTARIO APPLE.

Mr. BEADLE.—You remember, Mr. President, you brought to this meeting some of Mr. Arnold's apples, called the Ontario. I am told by Mr. Cotter that he has fruited the Ontario, and he speaks very favourably of it. It has been said that the Ontario will not do well so far north as this, and I want to get his testimony for it.

Mr. COTTER.—The first year that the Society sent it out I had bad luck with it ; but last year, by attending to the tree, I got eight apples from it. This year I think it bore twelve of as fine apples as I ever saw, both in size and shape. It is growing in front of my place where I planted it four years ago. I look upon it as the best winter apple we have in this part of the country.

Mr. HICKLING.—I exhibited some Ontario apples at our agricultural show here.

Mr. BUCKE.—The Ontario apple appears to be quite hardy in Ottawa. I fruited it this year for the first time, and it seems to be a very fine apple.

The PRESIDENT.—With regard to its fruitfulness, I picked over a bushel from a tree planted seven years ago last spring, which I believe is more than any tree of any other variety produced in the same length of time ; and it is an excellent cooker.

After passing a vote of thanks to the Mayor and Corporation and the people of Barrie for their attention to the convenience and comfort of the Association during its meeting, the Association adjourned *sine die*.

---

#### REPORT OF THE VISITING COMMITTEE APPOINTED TO ATTEND PENINSULAR FAIR AT CHATHAM, 1884.

At the request of your executive we visited the above fair on the 7th and 8th of October, for the purpose of gaining any information we could that might be of service to the Association, as well as offering such assistance as we might be able to give to exhibitors and others in the correct naming of the fruits on exhibition.

On our arrival at the grounds we were very courteously received by Messrs. Glenn and Tissiman, the president and secretary of the Society, who did all in their power to assist us, as also did other directors with whom we became acquainted during our visit.

From some cause or other the display of fruit was much smaller than we had anticipated—altogether below what might have been expected in a show of such size and general excellence—so that our opportunities for making our mission a success were proportionately lessened. We found the judges, Messrs. Alex. Goulet, of Ouvry, and H. W. Westland, of Ridgetown, to be men in every way qualified for the position, and in full sympathy with us and with the general work of our Association. In the absence of Dr. Sandys, of Chatham, the third judge, we were asked to assist these gentlemen in making the awards, which gave us a favourable opportunity of getting intimately acquainted with the exhibits, and of learning a good deal about the fruit-growing capabilities of the country around, especially the adjacent Lake Erie shore which is quite famous for its apple and peach orchards and vineyards.

The apple exhibit contained samples of the highest excellence in all the leading market varieties, Northern Spy and King of Tompkins Co. being noticeably fine. A dish of beautiful Ribston Pippins was shown, and some fine Swaars. Spitzenburgs were noticeable for their absence, as well as almost the whole class of what may be termed amateur varieties. Large specimens of Snow were shown, but not free from spots, and this was almost the only amateur variety there. There were some seedlings shown, and some local varieties. Varieties suitable for shipping took the entire lead, almost to the exclusion of all others. The naming was not without faults, there being misnamed dishes of such kinds as Spy, King and Baldwin. Many of the dishes were unnamed, there being no rule requiring correct naming, a matter we think which deserves the attention of the directors.

Pears were poorly represented, the May frost having almost entirely cut off the crop along the river, while on the shore which escaped the frost we were informed scarcely any trees exist. The specimens shown were mostly knotty or marked with abnormal russet patches, attributable to the frost. There were dishes of Clairgeau, Seckel, Duchess, Buffam, W. Nelis, and two or three other varieties not recognized by us.

Quinces of the Orange variety were shown, both beautiful and large, exceeding anything we ever saw before. The soil here seems peculiarly adapted to this fruit. We conversed with one grower whose crop this year is upwards of 20 barrels.

Of peaches only one sample was shown, of good size, but poor flavour—probably a seedling. This fruit is largely grown on the lake shore. We met a Mr. McGuigan, of Buckhorn, who had quite a good crop, in this year of general failure. He has five acres in peaches, but his crop was on one acre of the Hale's Early, six and eight year old trees, from which he picked over 200 bushels and which realized him upwards of \$800, while his neighbours had scarcely a peach, and he himself none to speak of from any other variety. He attributes his success to the favourable location of his orchard, it being protected by an adjacent ridge.

The show of grapes was limited both as to number of dishes and range of varieties. All were, however, of the highest excellence, proving that grape-growing is a success here. The bunches of Concord and Salem were enormous and thoroughly ripened, while Delaware, Agawam, Martha, and two or three others, were as fine as we ever saw.

Trusting in your forbearance for whatever of failure in the fulfilling of the objects of our visit, which may have been due to our own inexperience,

We have the honour to remain, gentlemen,

Your obedient servants,

T. C. WHEATLEY, Sarnia.

B. GOTT, Arkona.

---

#### RENFREW FRUIT-GROWERS' ASSOCIATION.

The summer meeting of the County of Renfrew Fruit-Growers' Association was held in the Town Hall, Renfrew, on Saturday afternoon, June 7th, 1884.

There were present :—A. A. Wright, President ; D. Halliday, Vice-President ; and Messrs. H. Airth, R. McLaren, A. Bromley, D. Frood, John Johnston, A. J. Lindsay, A. Forrest, T. Cole, A. Cole, John Stewart (Horton), F. Kosmack, Jas. Martin, W. Barr, D. Blane, M. McDermid, Jos. Knight, Alex. Stewart, Chas. Mayhew ; and W. E. Smallfield, Secretary.

This attendance was not as large as had been expected ; but as everyone present had more or less to say, the meeting was a lively and interesting one.

The first business of importance was the passing of a vote of thanks,—moved by Mr. Johnston and seconded by Mr. McLaren,—to Mr. E. Morden of Niagara Falls South, for his liberality and friendliness towards the Association in presenting the members with plants of the Raby Castle Currant and Honey Locust.

On motion of R. McLaren, seconded by Mr. Airth, the President and Vice-President were appointed as a delegation to wait upon the Directors of the South Renfrew Agricultural Society, at its meeting on Saturday, 14th inst., to see if they will grant \$10 to further extend the premiums for fruit displayed at the annual Exhibition, if the Fruit-Growers make an appropriation of the same amount for the same purpose.

The reports of those present who had received some of the Russian Apple trees in the Spring of 1883 were then received. Very few had been winter-killed ; and many of the same variety had done so well and had come so successfully through the past hard winter, in greatly varied situations, as to leave but little doubt of their value and perfect hardiness.

Mr. Wright said his Moore's Arctic Plums had all died during the winter. This was interesting information to the many who have laid out \$1.50 or \$2.00 a piece on a number of these trees during the present spring. The Glass Seedling, however, he had found perfectly hardy. He also referred to the blue plums on Mr. Richard Humphries' prop-



erty in Ross. The trees were hardy, and the fruit, he believed, was abundant and good; but as to name he could give no information.

Mr. Johnston said he believed these trees of Mr. Humphries came from Leslie's nurseries thirty-three years ago. The stone in the fruit was very small,—the smallest plum stone he thought that he had ever seen.

Mr. Halliday reported that he had covered his grape-vines with brush last winter, and they were nearly all killed. The few that he had covered with earth were not killed then, but had been injured by the late frosts after they were uncovered.

Mr. Airth covered with pea-straw and snow, and the vines had come through the winter all right. Covering with earth was probably the surest plan, but it was a big job if there were many vines.

Mr. A. Forrest found that the leaves of the wood made an excellent covering.

Mr. T. Cole had used both leaves and straw, and found either sufficient.

Mr. D. Frood used potato stalks. They did well, and did not rot on the vines.

Mr. Johnston covered lightly with earth, but did not make a mountain over the vines. For protection from late frosts he covered with woollen blankets; anything cottony was worse than nothing.

Mr. J. Stewart (Horton) covered with chip manure.

Mr. James Martin and Mr. D. Blane used coarse manure.

Mr. Allan J. Lindsay asked how he should treat his newly planted grape vines this summer.

Various members answered—to let the vines grow at will till fall, then trim down to the two strongest arms, leaving four buds on each.

Not many of the members cultivate strawberries yet, the wild fruit being still plentiful in the district. But Mr. Wright reported that he had the most satisfaction from Wilson's Albany, planted on the matted row system, in rows two and a half feet apart, with the plants six inches apart in the rows. The Col. Cheney, a large berry, he planted in rich ground, in hills a foot apart. He mulched with straw and sawdust, but preferred the latter.

Mr. Halliday said he grew what was called the Marrowfat,—sweeter and more luscious than the Wilson.

On a discussion upon the unexplained apple tree blight of last season, Mr. Halliday said it was his idea that it must be due to electric currents. It had been noticed that it was mostly the crabs in this district which were affected.

On the question of how the apple trees stood the winter, Mr. Forrest said all his were doing well, with the exception of the Twenty Ounce, which were gradually dying out. Mr. Martin's were all doing well. Some that had killed out in previous years were all right this time.

The McIntosh Red has been killed pretty generally this season, and will have to be relegated to the "doubtful" class. It will probably do all right in certain favoured situations.

The Hastings is dying off, too. The Canada Baldwin promises well, and as it flourishes on clay soil it will probably be one of the fruits of this district.

Mr. Forrest thought situation or elevation had more to do with success in fruit-growing than the soil.

Mr. Lindsay opened up a lively discussion on a much debated question by saying that in planting his trees this spring he had mixed sand with his clay land.

The majority of those present seemed to be of the opinion that a mixture of sand and clay made a soil which baked harder than the clay itself. Some suggested that variation in the quality of either sand or clay might make different results possible with different experiments. Others, who were of the opinion that a pure sand and clay mixture was poor and binding, thought it would probably be all right if plenty of manure or vegetable matter was mixed in at the same time.

The President again at this meeting requested the members to make a note of the date when their grapes first commenced to colour; and when they fully ripened.

Mr. Forrest had on exhibition a basket of his seedling apples—which will hereafter be known by the name of Forrest's Winter Seedlings. They were perfectly sound, and

all the members had an opportunity of testing their good qualities. A fruit which keeps so long, and grows on a perfectly hardy tree, is a valuable addition to the fruit-list of this northern section.

The following report on new fruits of the county was read at the meeting :

The past season having been very unfavourable for apple growing, very few desirable new specimens have been on exhibition here. At our fall show (1883) McLachlan's Seedling carried off the first prize. It is very attractive in appearance, of fair size, uniformly round, and symmetrical in shape, thin in skin, with a very tender white flesh. In flavour it is a mild sub-acid, and when in its prime quite juicy and good in quality. It is not a good keeper, the 1st of November being as long as it will last.

At our winter meeting two very fine specimens of winter fruit were on exhibition. One of them, Forrest's Seedling, a production of our own county, is desirable in size, greenish yellow in colour, very slightly tinged with red, giving it a sort of Russet appearance at a short distance. Its skin is somewhat thick and tough, but its flesh is very white, crisp, and tender. It has a mild sub-acid flavour, and a peculiarity of taste not easily described. It is, however, good in quality, and in consequence of its being a long keeper, and the tree reported to be very hardy, it should be more carefully examined and reported on again next season. Smith's Seedling, kindly sent by Henry S. Evans, Esq., Secretary of the Montreal Horticultural Society, was grown by Mr. John Smith, of Lachine, on the Island of Montreal. It is reported to be an excellent keeper, preserving its soundness and flavour into the month of May. It is of good size, oblate in form, greenish in colour, but suffused with red where it is exposed to the sun. In flavour it is mildly acid, white and tender in flesh, and being a good keeper, it should prove a very desirable apple if the cold-resisting powers of the tree are sufficient to withstand our climate. Scions will likely be procured for distribution among the members of our local association.

---

## WINTER MEETING.

---

The winter meeting of the Fruit Growers' Association was held in the Town Hall, Woodstock, on Wednesday and Thursday, the 30th and 31st of January.

The meeting having been called to order on the morning of the first day by William Saunders, Esq., of London, the President of the Association, and the minutes of the last meeting having been read by the Secretary, D. W. Beadle, Esq.,

The PRESIDENT.—The programme of this meeting, as drawn up by the Secretary, certainly surprises me a little by its novelty. Besides several other innovations he has introduced a President's address at the beginning and a President's address at the close of this meeting. While I do not propose to undertake a formal address, I thought perhaps a few words might profitably be presented to you at this opening session of a suggestive character. The practical parts of the work of the Association should, on all these occasions, be brought prominently forward; our chief aim being to help fruit-growers in every possible way. Some of our farmers need information even yet as to the profitableness of fruit growing; for the products of the orchard, if well managed, may be classed among the most profitable of crops. Many need also to have their faults corrected. There have

been many errors in tree-planting in the past. Too many varieties have been set out, and improper varieties have been chosen. In many instances too large a proportion of fall fruits have been planted; hence in an abundant season the markets are soon glutted, and as fruit of this character will not keep prices are apt to fall below a remunerative point, and disappointment is the result. We must learn to meet such difficulties as these. We must endeavour to overcome them as we find them. This particular one may be got over in a short time by top-grafting the trees with late-keeping varieties; or it may be remedied by the establishment of fruit evaporators, whereby the surplus stock may be reduced to such condition as will admit of its being sold at a later period of the year, and, if desired, shipped to any part of the civilized world. Every part of the apple may be made a source of profit, and nothing should be wasted. At a recent meeting of fruit-growers in Michigan, where I had the honour of representing this Association, a gentleman in the course of his remarks, gave some statistics with regard to the profitableness of apples, and he said that even the cores and skins were used at his factory, and the profit from these amounted in a short time to a hundred dollars. I asked him at the close of the meeting what use was made of the cores and skins, and he assured me they were very valuable in making apple jelly. On returning home I instituted some experiments in my own house, and found this was correct. In making apple sauce, too, in order to have all the flavour of the apple the skins and cores should be stewed separately, and the resulting liquid poured into the apple sauce. This adds very much to the richness and flavour of the sauce. Not only are we concerned in the selection of suitable varieties, but equally also in their subsequent care. How often do we see a young orchard of thrifty trees almost destroyed by being nearly smothered by a crop of grain, the rampant growth above excluding the air so necessary to the vital processes of the tree, while the thickly interlacing roots beneath the soil suck up the moisture and absorb the food which should have gone to nourish the trees! All this is wrong. That man would scarcely be considered sane who would expect his cattle to thrive while he withheld from them the food necessary for their sustenance, and at the same time pursued a system of crowding which scarcely permitted the animals to obtain air enough to keep them alive. But this sort of treatment the poor trees often have to put up with much to their detriment, and if they do not *persist* in thriving in spite of adverse circumstances the blame is thrown on the nurseryman, or the variety is pronounced tender or unsuited to the soil. What we want, gentlemen, is more common sense practice in these particulars. Grow root crops or vegetables among your trees. The stirring of the soil needed for the hoeing and weeding will benefit the tree, the ground will be kept clean, and the manure necessary to produce a good crop of roots will also promote the growth of the trees. Winter protection is also important. Trees are often pronounced tender which with a little more care would merit a different verdict. As an animal needs a little extra bedding in very cold weather, so a tree—particularly a young tree where the roots are near the surface—needs a mulch of some sort to protect it. For this purpose nothing is better than well-rotted barnyard manure, applied to a depth of four or five inches and spread so as to cover an area of three or four feet on each side of the tree. Such an application serves the double purpose of protection and food. We want also to give the knowledge needed by the amateur in village, town and city, whatever may be his calling, so that whether his lot be small or large he may know what is best to put in it so as to yield him the greatest satisfaction and pleasure and the largest returns. All these and many other things our Association endeavours to provide for. You will see that our programme covers many of such points, and I am sure that during their discussion much valuable information will be elicited; for we have with us, among our directors and members, many observing and thinking men who are constantly peering into the secrets of nature, and are always ready to give the public all the information at their command. In conversation a few days ago with a gentleman who had recently returned from a long sojourn in Japan, he told me that the Japanese had marvellous skill in the cultivation of flowers, and that they produced by artificial means wonderful development of size and colour. If you bought one of these and planted it the stimulus it had received by the treatment given would enable it to sustain its character for the season; but the next year the flowers would be much smaller; and within two years the probabilities are that they would have so much deteriorated that you would regard them as of little worth.



I asked him how it was done. This, he said, it was impossible to find out, as the Japanese flower grower could not be induced to divulge such secrets for any consideration. Fortunately we have got beyond this state of things, and our greatest pleasure is to convey to others any information we may gain which is likely to be a benefit to them. Fearing that in our programme some things may be omitted on which you would like information, the directors have introduced a new feature at this meeting known as "the question box." Any persons present wanting information on any subject within the scope of our Association are invited—nay, requested—to hand their questions written on a slip of paper to the Secretary, and the first half hour of each session will be devoted to discussing and answering such questions. I trust that as many of you as desire to do so will make free use of the question box. The questions will be taken up in the order in which they are handed in, and if more are presented than can be answered within the half hour the remainder will be reserved for the first half hour of the following session. We should like at all our meetings to have a full house, as we want to interest the great bulk of the community in our work. Everybody likes fruit; let them come and learn what is best to grow, and how best to grow it. Nor are we limited in our discussions to fruits; our society embraces also within its scope vegetables, forest and ornamental trees, shrubs and flowers. Bring along with you then your friends and neighbours, your wives and the members of your families, so that we may have a large audience, and thus have an opportunity of infusing into many minds some additional love for the beautiful and the good in nature.

Mr. BEADLE.—There is one point that I am glad you have touched upon in your remarks, namely, that this meeting is open to all the world. I have been asked on more occasions than one—I have been asked since I have been here—if this meeting is open to the public. Why, certainly it is; but people do not seem to have got the idea yet that it is; they seem to think we are a sort of secret council.

Mr. DENTON.—With reference to your remarks as to making use of the cores and skins for the purpose of giving a flavour to apple sauce, I would ask whether you also save the seeds for the same purpose?

The PRESIDENT.—The seeds of the apple, of course, go in with the core, and if you are not careful a specimen of the codlin larva will also go in sometimes. I enquired particularly of this gentleman in Michigan how they did with regard to that, and he said "Oh, we let them all go in together; it all makes jelly!"

Mr. DEMPSEY.—In our part of the country we are doing considerable in evaporating apples, making jelly and canning fruits; and I have visited several establishments where they saved the skins and cores; and in one case they had more than those to add to the flavour of the jelly. The peelings dropped on the floor; there was strong curiosity among the people to see this new evaporator running; and when they came to look over it they would walk over the peelings. These were swept up once an hour, and manufactured into a preparation for making pies with. And they used not only the cores and peelings in that way, but also the little apples. I have seen more filth in the evaporation of apples and in the preparation of the jelly and of the material for pies than I have ever seen in anything else. In running a drier a great deal of heat is required; but if a man gets too much he can fill one of those plates with peelings, shove it in, and that will lessen the heat for the time and enable him to save the whole batch of apples that may happen to be in the drier. In that way, therefore, the skins are a source of profit. In our part of the country also they have some process by which they are going to keep cider, and they are now preparing to manufacture all these things into that article. The cores, peelings, and little apples are all thrown into the machine; they pass through three, four, or five places where pressure is put on them; little streams of water are constantly running in; and this is constantly passing out as pure cider. In another way they manufacture vinegar. The canning process is a very interesting one—I believe more profitable than evaporating or the manufacture of jelly. A party told me last year—I think I told it once that it was over eight dollars a barrel to can Northern Spy apples; but the actual report is over sixteen dollars. I thought half that amount was enough to make people question the statement. They can those apples so nicely that after having been kept a year I have seen them as fresh looking as one of those apples on the table would be if it

was peeled. They had kept perfectly in the can. They just peel the fruit, quarter it nicely, put it in the can, and solder it up perfectly tight, then it is thrown into a vat with water, steam is turned on, and it is heated for so many minutes. The apples keep so perfectly in that way that you can ship them to any part of the world.

The PRESIDENT.—My object in mentioning the use of the cores and peelings was to show that there was a value in all parts of the apple; and if they are used in a cleanly and proper manner there can be no objection to them. The seeds contain a good deal of mucilage, and that adds to the value of the jelly obtained from apples. I may say that the same remarks apply to the quince. Some of the members may not know that the seed of the quince is the source of the bandoline or mucilage which ladies have been using on their hair for years past to keep it in proper position. This mucilage is yielded very abundantly by quince seeds; yet the extensive use into which it was brought a few years ago by the fashion to which I have referred had the effect of putting the price of quince seed up in the market to five or six times the usual figure.

Mr. BEALL.—I was much pleased to hear your remarks generally, but especially those respecting the making of apple sauce and the cooking of apples—not as a factory product, but as a home produce. But there is one nice point that you omitted, that is, the colouring matter contained in the peelings. This has been made use of in my house for a length of time. Of course you are aware that some apples, especially when they are cooked, are quite colourless; but by using the peelings in the way you speak of you retain all the colouring matter which is in them, and this adds much to the richness of the appearance of the sauce.

---

## APPLES.

The first topic for discussion was “Are we warranted by our own conditions and the present demand in growing apples largely, and if so what kind shall we grow?”

Mr. GOTT, on being requested to open the discussion, said:—I have not grown apples largely for the market, but in our western counties the fruit from the young orchards is being brought into the market; and the growth of it is found to be very profitable. The apples that we grow in those counties are of a superior quality, large-sized, beautiful in shape, finely coloured, and they can be put on the market at a remunerative price. They are not only marketable at home, but they are marketable abroad. They have gone as far as England, Ireland, and Scotland; and they are marketable there at remunerative prices. As for the varieties that are particularly suitable for these purposes, I may say that perhaps one, the Northern Spy, is, on the whole, the best. It has every quality that would recommend it to the purchaser as being a first-class apple in every respect. It will bring a large price in the English market, and so in any other market. We have also the King of Tompkins, an excellent apple. A great fault with it appears to be that it is a shy bearer. The Baldwin grown in this county is an apple of superior quality. It stands first-class in the list as a marketable fruit. It has a beautiful colour. I think I have never seen handsomer apples than the Baldwins that were on our trees this last year. The Golden Russet is very highly spoken of, and it is an apple of great value. Its flesh is very superior. It is remarkable more particularly for its late-keeping qualities, and for that reason our buyers will seek it wherever it is to be found. It has proved to be profitable also on account of its early and abundant bearing. It is an annual bearer, too, with us, whereas the Baldwin will only bear its crop every other year. I consider that some of our summer apples are valuable, especially the Red Astrachan; perhaps that is the most valuable for market purposes of all our summer apples. There are some of the autumn apples that are very valuable; for instance, the Duchess of Oldenburg and the Gravenstein.

Mr. A. M. SMITH.—I am not an apple grower, but I know a little something about apples for market. I have been engaged quite extensively for the last eight or ten years in buying for market. While agreeing in the main with Mr. Gott, I would differ with him with regard to a few varieties. I bought some 1,700 barrels of apples in his neighbourhood last fall, and I may state that I never bought a finer lot of apples than I got



there. The Northern Spy, which he has mentioned as the best, I would not put at the top of the list for value as a market fruit. I would head the list with the Baldwin. The Spy is a valuable apple, but it is a little tender for shipping, being a thin-skinned apple; and it shows bruises much easier than the Baldwin and some other varieties. In certain localities I have no doubt the Golden Russet is a very profitable apple, particularly in some of the northern parts of our province; but its value is far below that of the Baldwin or Greening in most of the markets of the United States. I shipped some the past season to Boston, and while I realized five dollars a barrel for King of Tompkins County I could not get more than three or three and a-half for Golden Russet. There is no question in my mind about the profitableness of apple growing in this section of Ontario, and in the section bordering on the lakes. I think Mr. Gott mentioned the Red Astrachan and the Duchess of Oldenburg as profitable varieties, and put the Red Astrachan at the head of the list for profitableness. I would reverse his order, and put the Duchess of Oldenburg first for profit. There is one apple that, I think, has been altogether too much neglected among cultivators, and that is the Pimate. For an early apple I know of no better in sections in which I have seen it grown. There are several varieties of fall apples that are very valuable. Some of them do as well, I have no doubt, as our winter varieties. Following the Duchess of Oldenburg I would recommend the Gravenstein. The Colvert is another very good one. The Jenning is a very productive apple, and is usually very free from spots or disease, but it does not bring quite as high a price as some others in the market.

Mr. BUCKE.—What about the Snow apple?

Mr. SMITH.—The spot is too bad in this part of the country for it to be any good whatever.

Mr. GOLDIE.—Have you grown the Early Joe?

Mr. SMITH.—I have never grown it myself.

Mr. GOLDIE.—That is one of the finest flavoured apples I know.

Mr. SMITH.—It is very fine flavoured, but as to profitableness it would not pay.

Mr. BUCKE.—I was going to ask Mr. Smith if he could give us some idea of the profit of an acre of apples or an orchard of apples.

Mr. SMITH.—That depends largely on cultivation and varieties, and season of course. I am quite sure that an acre of apples, well attended, in any good locality, and the varieties the right ones, will pay double what any grain crop will that you can grow upon the ground.

Mr. BUCKE.—And at the same time there would not be the same labour, I suppose.

Mr. SMITH.—With less labour.

Mr. BEADLE.—I would like to ask you about the Gravenstein apple. I have never yet seen an orchard of it, and I have wondered that I have not. I had three or four trees of it in my orchard, which, as you would naturally expect, is more of a specimen orchard than a market orchard. There was necessarily a surplus of apples, and I sent what we did not want to use at home to Montreal; and I realized net—after paying freights and commissions and all the et ceteras that the commission men can find to put on—four dollars a barrel. It is an apple of good size and good appearance; and the quality of the Gravenstein is first class. It is one of the highest flavoured of our autumn apples. I would recommend to persons to try it in their localities for an autumn apple. We have now a market for our autumn apples. There is always more or less of a market for them in our district—the Niagara District. For the last two or three years we have had failures in our apple crop. I need not go into the causes. These failures have been owing to an unusual combination of circumstances. And yet I believe, from conversation with those who have grown apples for market, that notwithstanding the failures they have realized more from each acre of their orchard, taking ten years together, than from any other acre on the farm. We must expect some seasons of deficit. What business can we follow, what crop can we grow, that has not its failures? What pursuit in life can we engage in that has not its downs as well as its ups? There is no use in our becoming discouraged in fruit-growing because there happens to be a succession of failures for two or three years. It is well to have a sufficient variety, so that our eggs will not all be in the same basket. Have a few autumn varieties, and a few summer varieties, and the balance winter. Have the varieties that are best adapted to your soil



and to the market in which you expect to sell. Intelligence in fruit-growing is just as important as in any other business. I have had persons come to me who knew nothing at all about fruit. I had a gentleman come to me two or three years ago, a lawyer by profession, whose health had failed. He wanted to know if he could not go into fruit-growing and make it profitable. "What do you know about fruit-growing?" I said. "Nothing," said he; "I never grew any fruit in my life." "Then," I said, "you will make a complete failure. The first thing you have to do is to apprentice yourself out for a season or two to some person who is growing fruits." There are other varieties that believe can be grown with profit. Grimes' Golden is an apple of first quality; and if I were growing an apple orchard with reference to the European market I would make that one of the varieties that I would test thoroughly. It is of about the right size to suit the English market. The only thing against it is that it is not high coloured; and yet it has enough of a golden hue about it to be attractive to those who know anything about fruit. It will soon come to be appreciated as a good apple in that market, and I believe you will soon get from twelve to fifteen dollars a barrel for it there when you will not get over five dollars for the Baldwin. A friend of mine told me that he realized \$14 a barrel in Glasgow for the Ribston Pippin after paying all charges. I believe there are sections of this Province better adapted to growing the Ribston Pippin than the Niagara District. We are too warm for it. It requires a cooler, moister atmosphere than we have.

Rev. Mr. HILL.—When I came in I heard the name of an apple which is very familiar to me. I am not a fruit-grower; but when I heard the Gravenstein mentioned, I thought I would like to add my testimony to its high flavour, and its value in the English market and the apple market generally. It is grown very largely in the Annapolis Valley in Nova Scotia. Perhaps, as you said a little while ago, with reference to the Ribston Pippin, the Gravenstein may require a cooler atmosphere than it would find in other parts of Canada. It has a large crop as an alternate bearer, it is a very highly flavoured apple, and is very beautiful to look at. It is perhaps one of the best table apples that grow. At the Fruit Exhibition of eight or ten years ago, Mr. Haliburton, the Queen's Counsel now residing at Ottawa, undertook to select apples for England from among the choice apples shown in Kentville, Nova Scotia. All his apples took prizes, and amongst them the Gravenstein. I think if the Gravenstein were largely grown it would realize as large if not a larger profit than the Ribston Pippin, though it will perhaps not keep so long. It will not keep much longer than this time of the year unless it is in a very cool atmosphere.

Mr. A. M. SMITH.—I presume the gentleman's experience has been in Nova Scotia, where the apple is grown in a colder climate. Here the Gravenstein will not keep till Christmas in good condition. Its season is about October and November.

Mr. GRAY, Woodstock.—I do not know much of the Gravenstein. It is grown here but little. The Ribston Pippin, I think, is an apple that may be grown successfully almost every year. I have had it in my garden for a great many years now, and I do not know of any one year in which it has failed. We always have a fair crop every year. I remember one year that I gathered eighteen bushels off a midling sized tree. I find they will keep very well up to about the first of February. I have them now just as fresh as they were when they were picked off the tree; but this year they are looking much better than they have done generally. Years before this they have been attacked a great deal by the worm, and they have matured early. This year they did not mature so early. In Montreal they will always realize for domestic use from two to three dollars more a barrel than any other apple that is brought into the market. The Greening, the Golden Russet, the Pomme grise, and the Baldwin, are all grown pretty largely in this part of the country, and I think successfully. Some of our old apples are now getting out of date, and I am sorry for it, because some of them are among the best apples we have. One of them is the Spitzenberg. I think it is a great pity that it is failing. The Snow is about as good an apple as we have. Some seasons it is spotted, and other years it has been very clean and clear. It does not spot here as a general thing. Of course different soils will make a great difference as to spotting.

Mr. GOTT.—I would like to ask the gentleman if he finds the Pomme grise to be profitable for market, and if so, in what market. While I am up I would like to add a

word or two of testimony as to the value of the Ribston Pippin. It is really a very valuable apple. It has excellent qualities, and it will keep right up to the present time. An apple that is coming into use amongst us, brought from Russia, is called the Tetofsky ; it is a summer variety, one of the first on the list to ripen. When matured it is not very large ; but it resembles wax. It will take well in the market. Unfortunately the flesh is a little tough, and quite acid ; but in my opinion the apple is one that will be profitable for market.

Mr. DENTON.—I wish to bear testimony to the merits of the Gravenstein as grown in Westminster by Captain Shore and his brother. They planted it about twenty-five years ago, and they both consider it the best apple in their orchard. In going through the orchards last summer about London I found the Duchess of Oldenburg bearing better than any other apple ; and when it came into the market it was on the whole, I think, one of the best varieties offered.

Mr. GRAY.—I am not prepared to answer as to the profit of growing the Pomme grise.

Mr. BEALL.—We have in our neighbourhood no large orchards. We have a great many apples grown, but the orchards are all on a small scale. I am satisfied, however, that better specimens are grown of certain varieties there than I have ever seen exhibited at any Provincial Fair. We commence the season always with Duchess ; that stands first. The Duchesses are always of good size, and they have a fine colour ; but they come earlier than they do in a great many other places. Last year was the first that I have ever known the Duchess to mature at a time which would fairly entitle it to be called a fall apple. It is a summer apple with us almost always. The next apple to that is the Astrachan. It does not bear well with us. We get a very good sample, very finely coloured, large sized, but the quantity produced is not so great as of many others, and it is not so profitable. The most profitable fall apple I think that we have would be the St. Lawrence. I have one tree that two years ago, eleven years from the time it was put out, yielded eighteen bushels. There are a large number of varieties of fall apples grown in the neighbourhood, but people find out that they are unprofitable ; that is they are not so profitable as others, because other varieties mature about the same time, and they become a drug on our market ; and they cannot be shipped. Our winter apples are few in number. For some time past I have thought that the Golden Russet was the best—the most profitable we have, but this last three years the Golden Russets have not turned out well. Two years ago the leaves were blighted considerably, and last year they did not recover.

Mr. GOTT.—Would you explain the nature of that blight ?

Mr. BEALL.—When I said a blight I should have said a fungus. The leaves all turned brown, and most of them fell from the tree much before the proper season. I am more deeply impressed this year than ever before with the greater profitableness of Grimes' Golden than of any other tree. I have only one tree of it, I am sorry to say. I have thought since I have been here that there may be a particular reason that it has succeeded so well this year with me that I had not thought of before. This tree is in a place I have reserved for trees, and for about three years past I have had about six inches of sawdust lying all over that spot. This is never disturbed, and I have found it a very great advantage to the apples, and especially to the Grimes' Golden, which falls very early in the season, and when it falls on hard ground is of course destroyed, but falling on the saw-dust is uninjured. It has just occurred to me here whether it might not be well for us to use sawdust much more than we have been doing. The Gravenstein is grown, I believe, in our neighbourhood, but only by one or two persons. I brought a few apples to the Provincial Fair at Guelph to have them named, and there was considerable doubt as to whether they were Gravensteins or not ; but since I went home I have satisfied myself that they were. Mr. Beadle had some doubt about the matter. He thought when he first looked at them that they were Gravensteins, but after tasting them he doubted it. He thought they were too large for the Gravenstein, and not sufficiently coloured. The Ribston Pippin is grown in our neighbourhood, but it is not a favourite. It is a very shy bearer.

Mr. CROIL.—I would like to hear from some of these gentlemen who have recommended the Ribston Pippin and the Gravenstein whether or not they spot. Perhaps they spot a



little. Well, the Fameuse at first spotted only a little, but they have gone on to spot much now that they are almost useless. That used to be our most profitable apple. With us they are not only spotted, but they are completely discoloured. I think they would better be called the Leopard apple than the Fameuse.

Mr. AIKENS.—I have had very little experience in apple growing; but I have had very great success with some kinds, more particularly with the Northern Spy. I am inclined to believe the difficulty this gentleman speaks of with regard to the spotting is owing to the fact of overbearing. I think if he were to thin off the crop—reduce it to proper quantity—the spotting would be done away with. I have found with my snow apple trees that when I had a large quantity of fruit the apples were disposed to be spotted and small, but when there was a smaller quantity they were large and fine.

Mr. CROIL.—The last crop I had of good Fameuses was an extraordinarily heavy one, and since that time they have spotted worse than ever they did.

Mr. AIKENS.—Do you consider the Fameuse and the Snow apple one and the same?

Mr. CROIL.—Yes.

Mr. REILLY.—I had a list of questions handed to me last fall with a request to have the answers filled out. When I was in Liverpool last winter I had this done by a broker there, and I will just read the questions and his answers.

1. Give a list of varieties in order of merit which command the highest prices in the market?

Newtowns, Kings, Canada Reds, Lady Apples, Golden Russets, Baldwins, Spitzes, Rox. Russets.

2. Specify varieties being shipped which you think are not likely to remain in demand permanently, and why?

The above descriptions are likely to remain in demand permanently.

3. How should apples be sorted as to size and colour for packing?

Different sizes under distinguishing brands as regards colour. Only one description of apples should be packed in the same barrel.

4. How do you advise packing to carry best?

Packed tightly.

5. Would bushel boxes suit better than barrels?

No.

6. Would it be any advantage to use barrels with scarcely any bilge and large quarter hoops, so that in rolling the entire weight would come on these hoops?

Do not think so.

7. Would there be any advantage in a barrel holding two bushels?

No.

8. Should the package be air-tight or have a vent?

The barrels should be air-tight.

9. Will it pay to use a more expensive package than the usual apple barrel.

No.

10. Would there be any advantage in packing a very select assortment in kiln-dried chaff, wrapping each apple in tissue paper, and padding top and bottom of barrel with marsh grass?

Do not think it would pay to do so.

11. Give varieties that carry and keep best in order of merit?

Golden Russets, Rox. Russets, Greenings, Baldwins, Newtowns, Spies, Spitzes.

12. Give the features that compose the points of excellence in your market?

Large-sized fruit, good colour, and keeping quality.

13. Do you consider Canadian grown apples superior to American grown in point of quality?

Yes, in keeping quality. Some seasons there are sufficient apples grown in the vicinity of London to supply that market; but Liverpool and Glasgow will remain good markets for our apples.

The PRESIDENT.—Is the market liable to be overstocked in such a way as to make the price fall below what is remunerative?

Mr. REILLY.—When they get to a low price, such as they did in 1880, the consumption



n largely increases until they use a large quantity in England. For instance, they had nearly a million barrels from America that year, while last year they had very few from there. They seem to think over there they can use any quantity when they get the fruit cheap and cheap. Last year our apples cost us so high that with the charges which had to be paid we could not sell them at a price which would enable us to compete with the growers in England. Oranges are very largely used there when they get them cheap; but in 1880 that they used apples in a great many places where formerly they used oranges. Oranges were very cheap that year too. The pedlars in London would load up with apples instead of oranges, because they got them so much cheaper.

Mr. BUCKE.—Did the prices received that year pay the people in Canada?

Mr. REILLY.—Yes. We took a large quantity over that year, and we realized very well on them. We got eighteen shillings for them that year; and at eighteen shillings they could afford to sell them there at two pence a pound, which is a very reasonable price here. We furnished the packages and did the packing, and paid about a dollar a barrel for them that year in this vicinity.

Mr. GILCHRIST.—Were the apples arranged according to their merit, and according to size and keeping qualities?

Mr. REILLY.—That is what the broker endeavoured to do. The Newtown Pippins brought the largest price. The market in England seemed to be very largely for high-priced apples this last year.

Mr. GOLDIE.—That year that you were paying a dollar a barrel here for them and they were low-priced in England, did they pay anything to the shippers?

Mr. REILLY.—Yes.

Mr. GOLDIE.—In all probability even with a plentiful crop they would not go below a dollar a barrel, and they could be shipped at that any year?

Mr. REILLY.—Yes; good Canadian apples bought at a dollar a barrel you would not lose money on, no matter how large the crop was. There is a great deal in having apples taken off the trees properly, and properly packed into the barrels. My experience is that they require to be very tightly packed. They sell apples in Liverpool as closely packed if there is any rattle; and that means a couple of shillings a barrel in the amount realized from the sale. I thought we were packing our apples tight enough, but found we were not.

A MEMBER.—What method would you recommend to pack them tighter than can be done by the hand; pressure?

Mr. REILLY.—I do not think there is any better method than that. They did not seem to think there was in Liverpool. I asked them if they thought it would be better to pack the ends with marsh grass, and they said they thought not. In London the sale prices are higher than in Liverpool. They are about two shillings a barrel in London; whereas about one-and-sixpence will pay them in Liverpool.

A MEMBER.—Are they saleable if eaten with the worm at all?

Mr. REILLY.—Well, it interferes with the sale. They want them thoroughly clear.

Mr. BUCKE.—Have you had any experience with dried or canned apples in England?

Mr. REILLY.—No. There were a few in London when I was there; but they were of a very dull sale. The people did not seem to have taken hold of them yet, but they seemed to think they would.

A MEMBER.—They use them in the north of England a good deal.

Mr. REILLY.—Yes.

The PRESIDENT.—We have a gentleman present from Michigan whom we should like to hear on the subject, Mr. Graham, of Grand Rapids.

Mr. GRAHAM.—I have been making fruit culture my occupation for the last twenty years in Michigan. I grow quite a number of apples; more largely of peaches, plums and cherries. I have about ten acres of an apple orchard. As to the question, are we warranted in extending and enlarging our orchards; have we a market and a demand for apples? I say yes, emphatically, if we grow the proper varieties. As for summer and autumn fruits, we consider there is little profit in them. I recollect very well forty years ago, when I was a citizen of this country, teaming apples from twenty miles below St. Thomas up to London and peddling them out at twenty-five cents a barrel, taking two or

three days to make the trip. When I look back to that time I see that we are making some progress. Looking at the immense amount of fruit that is consumed to-day among ourselves and in foreign countries, and to the increasing demand, it is a patent fact that we cannot set out too much apple orchard. Apples are the standard fruit, and are going to continue so. The most valuable variety we have for the market is the Baldwin. It will command a higher price in our western markets than any other variety. Then comes the Greening. It is winter fruit I am speaking of now. Next to the Greening would come the Canada Red, or Steel's Red, which we consider the same thing. The Northern Spy for home markets, Chicago, St. Paul, and Milwaukee: but for long shipments we do not consider them valuable—they are too thin skinned, and they do not bear rough usage.

The PRESIDENT.—What about Grimes' Golden?

Mr. GRAHAM.—We grow the Grimes' Golden; not largely, but sufficiently so to test its commercial value. As a dessert apple I think it unsurpassed; and it is a fine shipper. With us it is remarkably free from blemish; we have no apple in the orchard that is so free. It is fair, medium-sized, which for shipment I consider quite an advantage. The color is rather against it. It is green before maturity; but when it is ripened up properly it is of a fine orange colour. I think parties once using them will afterwards seek further for them. There is another apple that I want to give my testimony in favour of, and that is the English Russet. We call it the Golden Russet. It is an apple that with us does remarkably well. It will weigh heavier to the bushel, and I think it is the highest grade apple we have in the list. It is an apple that, I think, will ship better than anything we have in the market.

Mr. GOTT.—Is that English Russet distinct from the American Golden Russet, or is it the same?

Mr. BEADLE.—It is the Golden Russet of Western New York.

Mr. GRAHAM.—I would also endorse what has been said in regard to the Gravenstein, and also what has been said as to the Primate, which is a very fine apple. The Duchs also we esteem as one of our best apples. It is the coming apple of Michigan for a summer apple. We have another apple that is highly esteemed. It is called the Shiawassee Beauty. It is very similar to your Fameuse, but entirely free from those spots and blemishes which so affect the Fameuse. With us the Fameuse has become almost entirely worthless on account of the spot. I am glad to see in the country through which I travel evident signs of progress and prosperity. I find young orchards in almost every section of the country.

Rev. Mr. HILL.—Have you heard of the Bishop?

Mr. GRAHAM.—No.

Mr. BEADLE.—That is a Nova Scotia apple.

Rev. Mr. HILL.—It is an acid apple, a very fine one.

The PRESIDENT.—With regard to the Grimes' Golden, I think it is about eleven years since that apple was first put out. I ordered fifty trees from the original introducer when it first came out; and it was in those days when the Grand Trunk Railway was not so prompt in the delivery of freight as it is at the present time. These apple-trees were shipped from the neighbourhood of Cleveland, and it was about a month from the time they were shipped until they reached me in London. The trees had been rolled up in canvass, and the canvass was partially torn off and the roots exposed for nearly the whole of the month. When the trees came to me the roots were dried and the wood shrivelled. I threw the bundle into a pond of water, and left it there for about two days. During that time the wood swelled and the roots softened; and I planted those trees, and out of the fifty succeeded in growing forty-eight. I have found them stand the cold well. The apple is one that deserves to be better known; and I think that when we grow it in sufficient quantity to ship it to England it will be one of those apples that will head the list. The American Golden Russet I find to be an apple that yields good crops; scarcely ever fails; and the fruit commands good prices. The Snow spots badly in our district, but there is a considerable quantity of it grown there. The bulk of the apples of that variety have to be made into cider or used in some other way than shipped. The Wagener succeeds well throughout the most of Ontario. It bears very well, and abundantly. The fruit is

of medium size, of excellent quality, and good colour. We have had favourable testimony at previous meetings as to the price it will command in Europe.

Mr. GRAHAM.—There is another apple that is going to be a very good one for shipping purposes, although the quality is only second rate as a dessert or table apple, and that is the American Pippin. It is a medium sized apple, and it has excellent keeping qualities. It has a pretty thick skin, and I believe it is an apple that is going to be largely grown. It is inclined to be dry; is mild sub-acid, medium sized, and fairly well coloured.

Mr. GOLDIE.—One apple I have not heard mentioned is an apple that is grown very largely in Nova Scotia also; that is, the Nonpareil. Two years ago I was in Halifax attending the Dominion Exhibition there, and talking with Mr. Stoar over it, he considered it one of the finest and best flavoured apples they grew there. In shipping to England they commanded the highest price of any apple they grew.

Mr. BEADLE.—Do you know which Nonpareil it is? There is such a long list of them. Is it Ross'? Ross' is an English apple.

Mr. GOLDIE.—I do not know which it is.

Mr. BEADLE.—Is it a little Russet?

Mr. GOLDIE.—Yes.

Mr. BEADLE.—That is the Ross' Nonpareil. In our district it is dry and almost worthless. Perhaps in a cooler and moister climate it would be a valuable apple. I have two trees of it in my orchard which have been bearing for the past twenty years.

Mr. HICKLING (Barrie).—I quite agree with many of the remarks that I have heard respecting winter fruits; but we find in our locality that we are raising too many varieties—that we have too many fall apples, and they are very hard to dispose of. There is no sufficient market for them. As regards the summer apples we approve very much of the Red Astrachan. It is about our earliest apple. Then we have the Early Joe. That is a very nice apple for the home market. Then we have the Primate. I think it is a very good apple. It does well with us and does not spot. We have had very large crops of it for a number of years. The Duchess of Oldenburg comes after it, or about the same as the Primate, and is the best apple for the market, and I think it is getting into general cultivation in our section. It is liked by almost every person. They approve of it as the best apple for a fall variety. As regards the winter apples the Northern Spy does very well with us. Some places it has failed, but we have had large crops of Northern Spies and very fine ones. The Baldwin is doing very well. We have had some very good crops of it. I think the Baldwin is, take it on the whole, superior to all others as a winter apple. The Fameuse or Snow apple is almost a failure with us on account of the spots. We have got so discouraged with trying to raise it that we have thought we would top graft it with some other kind. We have some very fine Golden Russets.

Mr. BEADLE.—Does the Roxbury Russet thrive with you?

Mr. HICKLING.—We have very few Roxbury Russets, but they are a very nice apple.

Mr. BEADLE.—Do they stand the climate well?

Mr. HICKLING.—I think they do. The St. Lawrence apple is very prolific, and a very nice marketable apple—does remarkably well with us. I was at Bracebridge lately, and there I met a man—Mr. Collinson I think his name is—who has about twenty-five acres of land that he intend to plant. He has about three hundred trees. Of course it was not a season to know very much about it, but the trees looked very well. He said the Haas did very well there.

The PRESIDENT.—Do you find the planting of orchards in the Muskoka district increasing?

Mr. HICKLING.—Yes. I got a note from Mr. Coates, at Rosseau, who gave a very glowing description of some of the fruits. He was very much discouraged when he first began. The trees killed down so that out of a hundred apples that he set out at first he had only about five left, but he attributed it not so much to the climate as to want of drainage. He thinks he can raise as good summer fruits there as he can in any part. He sent a basket of strawberries to Toronto last fall and took a first prize though there were,



I think, forty competitors. I have not the least doubt that in our locality we can raise a good many apples that you perhaps could not raise on account of its being warmer here.

The PRESIDENT.—I had the pleasure of seeing Mr. Coates' place three or four years ago, and he had as fine strawberries there as I have seen anywhere. His orchard looked rather discouraging then, so many of the trees had been killed by frost.

### ESTABLISHING AN ORCHARD.

The following paper from Mr. Wm. Grey, of Woodstock, was then read :

The ground for an orchard should be well and deeply cultivated, and free from weeds, well drained, if the soil requires it, and most soils are better for draining except sandy or light gravelly soils with a light subsoil. Such land may not require draining, but in every case it should be well worked and pulverized and enriched before planting. The work of preparation must be done during the summer, so as to be ready for fall or spring planting. Planting in the spring is preferred, which will enable the trees to take firm hold of the earth and to resist the frost of the next winter, but planting may be done successfully in the autumn by protecting the trees so as to prevent the frost from heaving or misplacing them.

Select young, healthy and vigorous trees, and from a reliable nurseryman, and if possible from a soil similar to that in which you intend to plant your orchard. The different kinds of apples will depend on your own choice and the suitability of soil and climate. I should advise that the selection be made from the old, tried and reliable kinds.

The distance apart should not be less than thirty feet, so as to allow the trees room to spread their branches and to form a low and spreading head. Close planting has a tendency to force the trees to run up, and preventing the fruit from obtaining its proper colouring from the sun, and making it more difficult to gather the fruit. At the distance of thirty feet apart it will require twenty-nine trees to the acre. Before planting the tree, remove all bruised and broken roots by cutting clean with a sharp knife. Lay out your ground in straight lines, so that your trees will be in line each way and at equal distances, thirty feet apart. This may be done by planting stakes.

Dig the holes the proper depth and level at the bottom, and large enough that the roots may be straightened to their full length by the hand. The roots should lie equally divided as near as can be done. The proper placing of the roots has much to do with the growth and beauty of the tree. If the roots are thrust into the ground cramped, crooked, and without proper care, the trees will grow in like manner, stunted, crooked and misshapen. When the trees are placed in the hole, the roots properly divided and straightened, a little fine earth should be shaken over the roots, the tree slightly raised so as to give the roots a natural descent. The tree-top should incline to the west several inches, the hole to be filled with fine earth and firmly pressed, so as to hold the tree in its proper place. The prevailing west winds will soon bring the tree up to a perpendicular position, for if you will take the trouble to examine the orchards around you, you will find nearly all the trees leaning to the east. This is caused by the strong west winds.

The ground is prepared, the trees selected and planted, but your work is not finished ; care must be taken of the trees and ground. The tree tops should be well formed by proper pruning. The branches from the trunk should be at or as near equal distances apart as it is possible to have them, and three main branches or limbs are quite enough to form a beautiful head or top ; if this is done after pruning, no large branches will require to be cut or removed from the trunk ; without this precaution at first pruning and forming the top it is often necessary to remove large limbs from the trunks, thereby causing a gradual decay and finally destroying the tree. The ground should be well cultivated and kept in good heart, and may be profitably cropped for several years with potatoes, turnips, mangolds, carrots, cabbages or any other root crops.

The orchard should be well and securely fenced, and no cattle allowed therein ; fowls and swine having the run of the orchard will be a benefit to it, by destroying the diseased fruit and insects.

In conclusion I may say, that the same preparation as before recommended may be adopted with advantage in planting shade trees, evergreens, lawn planting, shrubs, or even flowers.

The few suggestions in this paper have been obtained from practical knowledge from work done by the writer, by planting orchards on his father's and his own farm and garden, in the county of Oxford, and from planting shade trees on the streets and public square in the town of Woodstock, having planted the first shade trees on the streets of this town over forty years ago.

Mr. GRAHAM.—In regard to the growing of crops in your orchards : My experience for the last twenty years is that whatever the description of trees—whether apple, cherry, peach, or plum—a grain crop is superior to any other crop that I have ever grown in an orchard. Take some of the smaller varieties of corn, the tree occupying one hill as you may say, the shade afforded by the stalks is a protection to the young tree, and keeps it more in the condition it would be in the nursery than it would otherwise be.

The PRESIDENT.—How near would you allow the corn to grow to the tree ?

Mr. GRAHAM.—About three and a half or four feet.

Mr. CROIL.—I was delighted with Mr. Gray's address. It contained so much that was practical. I think I have seldom heard so much in a few lines. I think he had there just about all the information you want about how to plant trees and plant them well. I think he said he planted them in the spring and fall. I may say that I have always found the spring the best time to plant trees. Another thing he spoke of was planting the trees with the tops to the west. That is a good idea. In that case they do not require stakes at all. It is very true that hogs running in the orchard will pick up insects ; but they will take some of the good fruit too, won't they ?

Mr. BEADLE.—I have a paper which bears upon this subject left in my hands by Mr. Beall who received a telegram that some member of his family was ill, and had to leave. It might perhaps be read now.

## FRUIT GROWING IN ELECTORAL DIVISION No. 5.

By THOMAS BEALL, LINDSAY, ONT.

This division is composed of the counties of Northumberland, Durham, Victoria, Peterborough, and Haliburton ; bounded on the south by Lake Ontario, having a coast line of nearly seventy miles thereon, and running into the interior, between parallel lines, a distance of about ninety miles.

A very large portion of the counties of Durham and Northumberland, and of the southern parts of Victoria and Peterborough, is eminently suited for the successful and profitable cultivation of all our staple fruits, excepting the peach. Apples and pears are more extensively grown than other fruits throughout that portion of Durham and Northumberland lying south of the "ridges," but north of the "ridges" and along on both sides of that great stretch of water which supplies to the counties of Victoria and Peterborough hundreds of miles of inland navigation, known as the "Trent waters" and its tributaries, may be found numberless isolated or detached tracts of land, many of which are thousands of acres in extent, more suitable for the profitable production of all the staple fruits, including grapes, than generally prevails in the first-named portion of this district. The soil here is generally of a light, warm, loamy nature, containing a large quantity of humus, and extending from one to three feet in depth ; generally overlying a gravelly clay subsoil. The elevation of these tracts, which varies from about 300 to 700 feet above Lake Ontario, and their proximity to such large bodies of water, secures to these favoured lands warmer and dryer summer days ; cooler nights, with very heavy dews, and greater protection from injuries by late and early frost, and also favouring a



more sufficient depth of snow for protection during the winter and early spring than exists at a greater distance from the water.

And yet there is but little fruit grown upon these eligible lands. The earliest settlers chose such lands for settlement as appeared to them most suitable for agricultural purposes, *i. e.*, the flat lands having heavy clay soils. Fruit-growing was an after-thought, and was tried only as an experiment on such land as was most convenient, and by persons generally in no way fitted to secure the best results. As a consequence we find that thousands of trees which had been planted on flat, undrained, heavy clay soils soon died, while many of those planted on hilly land, or where under-draining was not requisite, produced healthy trees and plenty of the most excellent fruit. The light loamy or sandy soils, supposed at that time to be inferior for agricultural purposes, fell into the hands of persons even less qualified to experiment in fruit culture than the settlers on the heavy lands; but, like their more opulent neighbours, they too must have an orchard, and the result has been that they have succeeded beyond their expectation, and would have been completely successful if varieties properly suited to their surroundings had been selected. As the matter stands, the partial successes now everywhere to be seen throughout this district may often be regarded as purely accidental, while the failures may generally be attributed to the grossest ignorance on the subject; consequently the magnificent specimens of fruit, especially of apples and pears, which may be seen at the annual exhibitions held at Cobourg, Port Hope, Bowmanville, Millbrook, Peterborough, Lindsay, Oakwood, and at many other local fairs throughout the territory referred to, and which, in many cases, cannot be equalled at our great provincial gatherings, may truly be regarded as "the survival of the fittest."

The question may well be asked, Why is there so little grown where there seems to be so much land admirably suited to this most desirable branch of farming?

I believe the chief reason to be listlessness or indifference in the undertaking, caused by the uncertainty of results arising from a want of the most rudimentary knowledge of the requisite conditions necessary to insure success, such as suitability of soil (or if not quite suitable, how to remedy the defects,) location, peculiarities of local climate, selections of varieties suited to the locality, preparation of the soil, proper care in planting, after-cultivation, pruning, and above all, having too many varieties.

Most of our orchards are either too large or too small for profit. When apples are required for the use of a family only, several varieties are necessary to secure a succession of fruit during the year. For this locality two trees each of the following varieties:—Duchess of Oldenburg, Red Astrachan, St. Lawrence, Snow Apple, or Wealthy, Grimes' Golden, Northern Spy, Golden Russet and Talman Sweet will secure this end, and be sufficient for any ordinary family. Two or three times this number of trees would in most cases prove unprofitable; but, if an orchard is to be planted as a commercial undertaking not less than four or five acres should be devoted to any single variety, and the varieties which, after due consideration, should be regarded as the most remunerative should be selected without regard to quality or taste.

Before commencing to plant an orchard on a large scale, the three following considerations should receive intelligent and earnest attention:—

1st. Are the climatic conditions of your immediate vicinity favourable for the production of the kinds of fruit you wish to cultivate?

2nd. Is the soil suitable to your requirements, *i. e.*, does it contain the requisite chemical elements? and if so, are the mechanical conditions of the soil to your purpose? and if not, can it profitably be so prepared?

3rd. What varieties will be most remunerative?

The subject of climate is placed first, as if this is unsuitable the objection is fatal. The summer heat should be sufficient; the cold of winter not too great; the aridity as well as the humidity should be ascertained; there should be a sufficient rainfall in summer and a protecting covering of snow in winter; and also sufficient time between the late and early frosts for the maturity of the required fruit.

The suitability of the soil in its natural state is of great but not of equal importance, as most soils can be so ameliorated as to become suited to the necessities of the case. It is simply a matter of expense.



When the climate and soil are known to be suitable to your requirements, the next most important question is as to the varieties most desirable for your purpose. This may be determined, 1st, by experimentation, or 2nd, by observation and inquiry of your neighbours, or by both plans combined. The first is a slow and costly process. The second is quick and certain. The addition, on a small scale, of the first plan to the second may to some extent be desirable.

The expense of planting a large orchard and the cost of its cultivation and maintenance until it becomes remunerative require a large sum of money, and there are not many persons who have both the requisite knowledge to insure success and the capital; and those who have spare capital rarely possess much knowledge of fruit culture, and are therefore cautious about investing money in an undertaking the success of which depends on other people's knowledge. Hence the reason why so little capital is invested in this most lucrative industry.

If a joint stock company is to be organized to build a mill, an organ factory, a waggon shop, or a steamboat, capital is freely subscribed, and often by persons having no knowledge of the business; then, why not seek to establish the same principle in fruit farming? The records of the fruit business during the last twenty years prove conclusively that this province is more suitable for the growth of staple fruits than any other country of equal extent in the world.

When this subject meets with the response it deserves thousands of farms, say of 100 acres—there are many such in this neighbourhood—each peculiarly suited to fruit culture, which are at present furnishing but a beggarly subsistence for a single family of say three or four persons, and which by the expenditure of a comparatively small sum of money in skilled labour and "plant," will furnish employment for at least fifty persons, and in a few years the miserable-looking farm will be changed into a beautiful and profitable fruit garden.

I believe no other industry can furnish so much employment for both skilled and unskilled labour, or advantageously raise the moral and social standing of our people so much, and at the same time realize for the investors such large profits on the capital invested as in this, the most delightful and least laborious of all honourable out-door occupations.

### THE QUESTION BOX.

The afternoon session was opened by the reading and answering of questions from the question box, as follows:

MR. BEADLE.—The first question in the question box is one with regard to this piece of timber, referring to a piece of a branch of a tree which is lying on the table. It is perforated through the bark by small holes. It was given to me by a gentleman who thought that the insects which made the holes were the cause of the yellows in the peach. This is from a peach tree. The question is, "Is this insect the cause of the disease known as the yellows in the peach? if not, what is the insect, and what is the remedy for these attacks?" It is believed that these attacks have something to do with injury to the trees.

THE PRESIDENT.—The insect in question belongs to a family of insects known as cylindrical bark borers. As far as I know of their habits they attack the trees when they come in considerable numbers. The channels often radiate to a considerable extent from a common centre. I do not think that these cylindrical bark borers often attack healthy trees. They generally affect forest trees which have been fallen and allowed to remain for some time, and in which incipient decay has taken place. I do not know of any better remedy than an alkaline wash applied to the bark of the tree, such as soft soap diluted to the proper consistency with solution of washing soda. That, when dried, forms a sort of varnish over the tree, which remains for a considerable time, and is not easily washed off by the rain. A yearly coating of this applied to all our fruit trees will aid materially in keeping down all these borers. I do not think that the presence of these insects has anything to do with the yellows in the peach.

MR. BEADLE.—I have another entomological question. Here are some small twigs of the peach which seem to have been perforated by some insect, and apparently eggs deposited

in the perforations. A gentleman in the Niagara district sent me these samples; and he has written an article which was published in one of our St. Catharines papers upon this as the cause of the yellows in the peach. The insect is evidently a different one from that I have just handed to you. The question is, "Is this the cause of the yellows in the peach, or has it anything to do with the yellows; if not, is the insect likely to produce serious injury to our fruit trees?"

The PRESIDENT.—The insect referred to here is what is commonly known as the tree cricket. Its habit is to deposit its eggs, which are about the one-sixteenth of an inch long in twigs of fruit trees and vines. It affects the raspberry more than any other variety of fruit, depositing its eggs in the canes. The female is furnished with a long sharp ovipositor, and she sits upon the twig and saws a hole about half-way through it, deposits an egg, shuffles along a little farther and deposits another egg, and so on until she lays about twenty eggs; that is about as many as she will lay in a patch. She then shifts on further and lays another lot. When these deposits of eggs are made there is left on the surface of the bark a peculiar mark like a row of punctures which have been partially healed. The track is very easily seen on the cane. The result of this work is to weaken the cane; and in the case of the raspberry it very often results in disaster; because the cane being weakened, when the foliage expands in the spring of the year the cane breaks off at that point. The grape canes are often selected as suitable places for these eggs; as also are the twigs of the peach, the twigs of the plum, and occasionally those of the apple and the pear. The insect itself does not feed on any of these trees or vines; neither does the young when hatched feed on them. The only object of the insect in laying the eggs in these twigs is to have them protected in the winter. As far as their habits of feeding go they are claimed to be beneficial rather than injurious. It is said that they feed on aphides, but I do not know that they do that to any great extent.

Mr. GOTT.—Is that the insect which causes that peculiar singing noise which we hear about the month of September, especially in the evening, and if so how is that done?

The PRESIDENT.—The male of this insect sings, I think, all day long. The females are voiceless. You can often see a male singing beside the female when she is laying her eggs—encouraging her, I suppose. The only way to get rid of them is to cut these twigs out in the winter and burn them. Sometimes in the autumn the insects can be caught where they attack raspberry bushes badly by holding some vessel under the bushes and shaking them into it. In the morning they are torpid, and can be caught in that way.

Mr. BEADLE.—I understand you, then, that neither of these insects has anything to do with the yellows?

The PRESIDENT.—Nothing whatever.

QUESTION.—What profit may be expected in a favourable season; first, from ten acres of peaches; second, from ten acres of apples? Can apples be grown profitably, and if so what kinds, in the neighbourhood of Lindsay?

Mr. A. M. Smith being called on to answer with regard to peaches, said: It will depend a good deal on the soil, the location, and the varieties. If they were on good soil, in a good location, and the season was a good one, we might expect (about the time they were in the best of their bearing) a couple of thousand dollars for them.

Mr. BEADLE.—He says everything being favorable. As an average what profit may a man expect to get from ten acres of peaches—at Grimsby.

Mr. A. M. SMITH.—Formerly a man would expect to average about a hundred dollars an acre profit from his peaches.

Mr. Dempsey being requested to answer as to apples, said, variety and market has something to do in this matter. I have known a hundred apple trees of the Colvert variety, after being fifteen years planted, to produce \$500 in a year. This was perhaps the largest amount that we would get. If we had ten acres like that it would be \$5,000 in a single year. The expense of cultivating the orchard would be but very little. I think we can safely calculate, taking one thing with another, when the trees have arrived at mature age, on \$100 per acre profit for apples. That is with good varieties. I think apples can be grown profitably in the neighbourhood of Lindsay. I have heard Mr. Beall speak of varieties—in fact I have seen them—growing in the neighbourhood of Lindsay.



which seemed to be succeeding admirably well. Take the Duchess of Oldenburg. In the neighbourhood of Lindsay it does well and produces large crops—actually matures earlier or fully as early as the same variety grown near the front under the influence of our large bodies of water. The Tallman Sweet grown there, they speak very highly of. The Golden Russet succeeds also. It occurs to me that the Wealthy might succeed in those northern climates.

MR. GOTT.—What about Ben Davis? It is one of the promising apples of this country.

MR. DEMPSEY.—The Ben Davis with us this year has been badly spotted, like almost every other variety. The Duchess of Oldenburg and two or three of the new varieties that we have were free from spot this year. The Ben Davis wants a good warm soil; and invariably it is necessary to thin the fruit. It will become a prettier apple, when packed for the market, than the Northern Spy, if properly grown; but if we allow the fruit all to remain on the tree it will be small and without flavour. I think the Ben Davis will succeed almost anywhere. The Alexander would be profitable at Lindsay; and the Tetofsky ought to be too. Almost all those Russian varieties ought to succeed there.

QUESTION.—What is the best preventive and the proper time to prevent the codling moth from attacking the early harvest apples?

THE PRESIDENT.—I forgot to say to the members of the Association that we have with us one of the foremost agriculturists of New York State, Mr. Woodward, of Lockport. Perhaps we had better call on him to answer this.

MR. WOODWARD.—Decidedly the same remedy will prevent the codling moth attacking the early harvest apples that will keep down the late codling moth; that is, apply some sort of poison, some Paris Green or London purple for instance; and the proper time to apply it is after the blossom has dropped, and while the apple, though it has appeared, has not got large enough to turn down. This is a specific for destroying the codling moth. There are many ways by which the codling moth can be kept down. One is by pasturing the orchard with sheep and hogs. I do that every year, and at the same time that you have them there they manure the trees. We apply the Paris Green with a force-pump. We use one that is made in Lockport. The Paris Green is mixed with water, and wants to be kept stirred up while the spray is being thrown upon the trees. The nozzle of the hose should be very small in order to make the Paris Green go as far as possible.

THE SECRETARY.—I may say that the force-pump referred to was advertised in recent numbers of the *Horticulturalist*.

MR. McD. ALLEN.—I have tried Mr. Woodward's remedy, and it was effective every time I did so. I used about a teaspoonful of the Paris Green to a pailful of water.

MR. WOODWARD.—There is another little feature in connection with the use of Paris Green that I must say is contrary to my notion of the fitness of things. Messrs. Moody & Sons, large nurserymen in our town, are large plum growers. Last fall I went up and saw their orchards; and Mr. Moody showed me a part of the orchard in which they had used Paris Green for the curculio, and another part in which they had not used it, and I was surprised to see the difference. I had not thought it was possible for Paris Green to kill the curculio; but actually in the part of the orchard on which they had used Paris Green the trees were breaking down, while on the other trees on which they had not used the Paris Green there were scarcely any plums at all.

MR. McD. ALLEN.—We have been using Paris Green for a number of years; but there is a prejudice against the use of it, simply because it is used in too large quantities. Some have hurt their trees by an overdose. But growers there who have used it pretty generally believe in it now.

MR. GOLDIE.—What time do you use it on the plum?

MR. McD. ALLEN.—It should be used very early, just when the fruit is early set.

MR. CROIL.—Might I ask Mr. Woodward if some substitute might not be used for Paris Green which would be cheaper and just as effective; for instance, a strong decoction of tobacco. Or what would be the effect of carbolic acid or some such thing?

MR. WOODWARD.—I have too much regard to the sufferings of even insects to use tobacco on them. It is almost impossible to get two samples of London Purple of the same strength; but if you buy the best grades of Paris Green you get a more certain commodity. A good tablespoonful of it is plenty for a barrellful of water.



## ADDRESS FROM THE BOARD OF TRADE.

At this stage a delegation from the Board of Trade of Woodstock was introduced to the Convention, and Mr. John Craig (the Secretary of that body) proceeded to read the following Address of Welcome to the Association :

### ADDRESS OF WELCOME TO THE ONTARIO FRUIT GROWERS' ASSOCIATION

BY THE WOODSTOCK BOARD OF TRADE, 30TH JANUARY, 1884.

*Mr. President and Gentlemen :*

The Woodstock Board of Trade would, with your leave, take this opportunity of expressing the pleasure they felt when it was announced that you had arranged to hold the winter meeting of your Association in Woodstock. By doing so you intimate that you accord with ourselves in thinking that Woodstock is a prosperous and prominent town—the centre of a large fertile and prosperous agricultural and fruit-growing district, not unworthy of the eulogium frequently passed on it as being the garden of Canada, and the focus from which might radiate in every direction the light or knowledge which, as an Association, it is your object to diffuse.

The Woodstock Board of Trade recognize and pronounce your Association to be one of the most important and useful in the Province, and endorse with all heartiness the action of the Provincial Government in aiding your operations by financial appropriations. There can be no two opinions regarding the profits of fruit culture in Canada. It has been, is now, and will be a source of wealth to the country. Like other branches of husbandry, however, it has not yet reached its acme or height of perfection, and is subject to reverses. To further improve and develop it by the introduction of new varieties, and the suggestion of better modes of cultivation, and to combat and conquer its foes such as blight, insects, etc., is the object of your Association. Therefore is it that we, as a Board of Trade, having the material interests of the country as the object of our solicitude, hail your organization as the right thing in the right place. In the past your work has been invaluable, and we now say, go on and still further promote fruit culture and the kindred objects of your Association. You have met here to continue your operations by the reading of essays, papers, answering questions and discussion. We now tender you a most cordial welcome, and trust that you will feel at home among us, and that the result of your winter meeting in Woodstock will be in all respects eminently satisfactory.

JOHN WHITE,

*Pres. Woodstock Board of Trade.*

JOHN CRAIG,

*Secretary.*

The Mayor of the town was also introduced and addressed a few words of welcome to the Convention.

The President briefly returned thanks.

### APPLE CULTURE IN THE COLD NORTH.

Mr. A. A. Wright of Renfrew, then read the following paper on the above subject :

It is a fact well known to horticulturists that persons living in the same latitude do not necessarily enjoy the same climate. On the contrary, it is very rarely the case that they do.

For example, I reside in latitude 45° 30', or on the same parallel as the inhabitants of the southern part of France. Yet while they enjoy the mild warm climate of Southern Virginia, we, in the Ottawa Valley, endure the more rigorous and severe climate of the southern portion of Central Russia.

While, therefore, we may justly claim to reside in the "Cold North," yet the inhabitants

of Southern France, though, as I said before, they may live on the same parallel of latitude, are by no means justified in claiming to reside in the "Cold North" also.

Even on our own continent the isothermal line is continually changing, now going south as the elevation increases, or where the situation is not affected by large bodies of water or running streams, and then it may suddenly turn to the north for sometimes one, two, or even three degrees, where the surroundings are more favourable.

You can readily see that this will have a decided effect on the growth of all trees ; so that those that flourish on one degree in the east, may entirely fail on the same parallel, if planted at an inland portion of the continent and situated at a greater elevation.

Fruit-bearing trees are, however, affected by these changes more than any other ; and they are grown, or their propagation becomes a failure, in the same latitude across the continent not even according to the isothermal lines of annual temperature, but more in accordance with the lines of extreme cold in winter, or the so-called isochimeneal ones.

I may here cite one remarkable instance : While on the eastern shore of Lake Michigan almost every kind of tree fruit natural to the temperate zone flourishes and is grown in abundance, yet on the western shore, but a hundred miles away, in Wisconsin, the climate is even less favourable for horticultural purposes than it is in our own Upper Ottawa Valley.

It is for these reasons then that I have designated this article with the title of "Apple Culture in the 'Cold North'" instead of saying merely in the "North."

And now to draw the line still more clearly. By the "Cold North" I mean those localities where the mercury frequently registers 30 and 35 degrees below zero in the Fahrenheit thermometer, and where in our test winters—such as the present one has been—it sometimes goes to 40 degrees below, as it did on the morning of the 6th January ; or, in short, where the mercury freezes in the bulb.

It is therefore for persons residing in these unfavoured districts that this article is mainly written.

It is of course patent to all that there is a limit to the vitality of every tree, shrub and plant as regards temperature. The northern horticulturist has therefore two points to consider :—1st, the degree of cold to which his trees will in all probability be subjected ; and 2nd, the cold-resisting powers contained in the tree he is about to plant.

The northern orchardist therefore should not plant a single tree that cannot endure an ærial temperature of at least 40 degrees below zero ; for if he does the history of his trees from the nursery to the grave will be short indeed, and to him full of sorrow, accompanied with the usual financial loss.

It is scarcely necessary to say that a less degree of cold will destroy the unprotected roots of any kind of tree, and they should therefore invariably be well protected.

Fortunately nature assists us very largely in this respect by almost always providing us during the winter season with a cheap and abundant supply of snow, which as a shield from the biting cold stands unsurpassed. Occasionally, however, there are seasons in which we are largely deprived even of this blessing, and the vigilant and successful husbandman has to provide against this calamity by mulching his trees, especially those standing in exposed situations, with an ample supply of straw, long manure or some other substitute.

Doubtless it may be considered useless to tell anyone that it is unwise to plant even a single tree, much less a large number, until the ground has been thoroughly drained and properly prepared for their reception.

A few words as to the best method of preparing the soil might not be out of place here, nor unacceptable to the beginner. So far as my own experience goes I have found the best results by first ploughing the land up into ridges, so that the centre of the ridge shall occupy the place where the trees are to stand. Then plough the land again in a cross direction, thus dividing it into squares in such a manner that the centre of each square will mark the place for planting the tree. A series of high knolls will thus be formed so that if the work be well done the land will be quite effectively surface drained at least.

It is by no means objectionable to proceed in this way on any kind of soil, but it is absolutely necessary that it should be effectually done on anything approaching to a heavy clay.

Your knolls having been thus formed sufficiently high, preparations should be made to prevent the roots of the tree from going too deep into the ground, otherwise when the heaving of the ground, which the frost invariably causes, takes place, the descending roots will be torn asunder, whilst those which find a place near the surface and spread themselves out sideways from the tree will largely escape injury.

To prevent this downward tendency of the roots the Jesuits and the original French settlers on the island of Montreal invariably placed a large flat limestone under each tree, and this was found to accomplish the desired object as the roots could not of course penetrate the stone, and on reaching it would turn outwards and grow in a lateral direction from the tree.

But these large masses of stone are not always available in every locality, and even when they are they are cumbersome and heavy to handle.

The following has, however, been found an excellent and effectual substitute: Take the trunk of a pine tree, say about two-and-a-half or three feet in diameter, and from this saw off blocks from three to four inches in thickness, placing them so that there will be one about eighteen inches deep under each tree when planted.

These are easily procured, readily handled, and appear to answer the purpose for which they are made quite as well as the stone; the pine wood when placed under the ground and away from the action of the air, enduring a long time, and is quite effectual in giving the desired direction to the roots of the trees.

It may not be inexpedient to say a few words as to the best locality for planting an orchard. Contrary to the expectation of many, it has been found that a northern slope is preferable to a southern one, as, during the warm days in spring, trees standing to the south are liable to sun-scald, whereas those planted on a northern exposure are rarely affected in this way, as the rays of the sun have a less injurious effect upon them, their position sheltering them largely from it. An elevated position is also much to be preferred to a low-lying one, for the simple reason that the frost strikes the low-lands much earlier in the fall than it does the high ground, thereby seriously injuring the trees, through falling on the tender ends of the limbs before the new wood and terminal buds are fully ripe, causing great injury and not unfrequently eventually killing the tree.

And now, having thoroughly prepared the soil for the reception of our trees, and having selected the best locality at our disposal, the next and perhaps one of the most important things of all is the selection of varieties sufficiently hardy to withstand our rigorous climate.

For some reason which I cannot explain, it would seem that as the tree increases in its power of winter endurance its proneness for bearing winter fruit diminishes, and the summer and fall varieties take their place. Hence nearly all of our so-called Iron-clads are either summer or fall apples,—very few late-keepers of good quality having as yet been disseminated by our nurserymen.

In the list of early summer and short-keeping varieties the Yellow Transparent and Tetofsky undoubtedly stand at the head; the first-named receiving the preference in consequence of the inclination of the latter to drop its fruit.

The White Astrachan is also extra hardy, a free-grower and a long-lived tree. Its fruit is medium in size, greenish-white in colour, tender in flesh, but often water-cored and wanting in juice and acidity.

In very favoured localities the Red Astrachan—which ripens about a week later than the White—might succeed, but with me it has not proved quite hardy enough, and therefore is not to be generally recommended.

Among the early fall apples we have a more extended list, and here the Grand Sultan and Duchess of Oldenburg contend for the first place. They are alike good for dessert or cooking, desirable in size and appearance, and what is all important—remarkably hardy. They always command a ready market, and pay the orchardist well for his trouble.

Following close on these in order of merit comes the Peach of Montreal,—of fair size, good in quality, but yellowish in colour, easily bruised, and showing the bruises badly; consequently, it is not so desirable, as it cannot be shipped to advantage. But for a home market it will be found very remunerative.



The Emperor Alexander is valuable chiefly in consequence of its large size, attractive appearance, and the considerable hardness of the tree.

The Wallbridge is also well spoken of, and generally recommended as being sufficiently hardy for our section of the Province.

And finally we come to the later keeping varieties. With me the two that stand out pre-eminently above all others that I have grown, for their hardness, showy appearance, desirableness of size, flavour, and good keeping qualities, are the Wealthy and the McIntosh Red—the former being a seedling from Minnesota, and the latter a seedling of our own province, it having first been grown by Mr. McIntosh in the county of Dundas. These are really two grand acquisitions to our list of hardy cold-resisting trees, and no Northern grower should think of being without them. Northfield Beauty, Magog Red Streak, and Scott's Winter are all Iron-clads, and although not of the very best quality are certainly of sufficient merit to deserve honourable mention here. I have several other very promising varieties under trial, but not yet sufficiently tested to enable me to speak of them with certainty.

As to the age and size of trees for setting in the orchard, my own choice is for young trees of not more than two or three years' growth from the graft, or one or two years from the bud, and not more than three or four feet high.

In pruning, leave on as many of the lower branches as possible, so that when the tree matures the ends of the lower limbs shall if possible rest on the ground. Such trees have their trunks in this manner well protected from the injurious effects of the sun in spring, and are preserved from that splitting of the bark which so often occurs when the sap first begins to move at the opening of the season. In this manner an excellent receptacle is formed for the snow, where it lies protected from the winds, and being likewise sheltered from the melting influence of the sun it remains protecting and fertilizing the roots of the trees.

And now, hoping that this paper may be of some assistance to my co-labourers in our unfavoured districts, and trusting that it may be the means of inducing some one to plant who has not yet planted, and thus cause his home to be more beautiful, and himself and his whole household happier and more healthful, and the whole world better and richer for his exertions, I cannot, perhaps, close better than by saying with the poet—

“Plant thy trees, O Husbandman !  
What though others reap ?  
They will take root and rise,  
Sip the dew and kiss the skies—  
Plant thy trees and sleep.

“In thy labours thou shalt live ;  
Dust alone is dead :  
Ever fall the rain and dew,  
Thy trees shall bear, though not for you—  
But the world is fed.”

Since the above was written I have been able to see the effects of last winter's cold on my fruit trees. As it was an unusually severe one, being in short one of our “*Test winters*,” I am enabled to make a few timely corrections. McIntosh Red, of which we had such good hopes, almost entirely failed except in very favoured locations, and we are reluctantly obliged to place it among the list of “almost hardy enough” varieties for those sections where the mercury sinks to 40° below zero in a reliable Fahrenheit thermometer.

Mr. BEADLE.—I want to ask a question. I notice that Mr. Wright has mentioned an apple which originated in the county of Dundas, and has spoken very highly of it. I am glad to hear that. I have been informed by those who have been growing that apple in various parts of the northern New England States that the fruit is likely to prove a failure there because of those fungus spots which we have already been talking about affecting the Snow Apple. I wish to ask Mr. Wright if he or any of his neighbours have had any experience yet in fruiting that tree, so as to be able to say whether it is likely to be subject to those fungus spots in his part of the country.

Mr. WRIGHT.—I have fruited my trees for two years. They have borne well, and the fruit has been beautiful looking on the trees ; but unfortunately boys obtained access to my orchard and carried off every single specimen I had. I would like to mention that the original tree is over eighty years old, and that there is something remarkable about the wood of it. You can go and take hold of those long slender limbs and put the whole of your weight on them, and they will bend down without breaking. They are as strong as hickory.

Mr. GRAHAM.—There are paragraphs in that paper that I should certainly join issue with. There are a great many gentlemen here who know that placing a stone under a tree will not prevent the roots going down. It is well known that the roots spread a considerable distance over the ground. It is well known that they will spread about as far as the branches do. It would take a good deal of stone or wood to go under all that. I do not think it would be necessary in that section of the country to plough as he says. We have droughts in the summer and we know very well that with land ploughed up in the way the gentleman describes the water would run off immediately, and therefore the roots of the trees would receive very little moisture. I have seen shade trees actually die from drought in the summer. We should prevent that as far as possible by having our ground well underdrained, and we should have it as level as we can. It is essential that trees receive moisture from the ground to support their growth. You cannot, I think, have an orchard too level. You want no ridges or knolls to plant trees on in this part of the country. I am speaking only of our own district. I know nothing of the "cold north."

Mr. WRIGHT.—I wish to say here that I think the gentleman who has spoken is quite correct with reference to climates which are more mild than ours. If I were planting an orchard here I would never do anything of that kind at all, but planting in the north I would not plant in any other way.

Mr. CROIL.—In answer to Mr. Beadle's question, I am very sorry to say that my experience with the McIntosh Red is as he has stated. I planted out about a hundred trees of it ; they have just come into bearing now, and I am pretty sure the fruit they bear will spot as badly as that of the Fameuse does.

The PRESIDENT.—I observe in connection with the discussion of this paper that item No. 3 of our programme reads as follows :—"Discussion on this paper, and as to whether we have reason to believe that Russian fruits will thrive in our cold sections, and meet the needs of our people residing there." I do not know anyone better able to say a few words more on this topic than the gentleman who has read the paper.

Mr. WRIGHT.—I am hardly qualified to answer that question as it should be answered. I may say that we have been trying a great variety of what we thought the hardiest trees we could procure ; and wishing to get something that was more hardy than anything we had, I wrote a year ago to Mr. Budd, in Iowa, asking him to give us some of his Russian varieties, and telling him that if he would I would endeavour to have them circulated as largely as possible about our locality and report to him every year. An arrangement was come to whereby I got 200 of these Russian trees, and they were circulated among persons in our locality in fives, and these persons were to report to me and I to him. They were only planted last spring however, and I am not able yet to speak as to their hardiness. I was last year a judge of fruits in Montreal, where they had about forty varieties of Russian apples, and I must say that I was somewhat disappointed in the quality of the fruit. The trees appeared to be pretty hardy from the reports they gave ; but the quality of the fruit was nothing in comparison with that of the seedlings that these people in Montreal had on exhibition there. There were, however, three or four varieties that were very good, and if the trees will prove hardy enough for our section they certainly will be a valuable acquisition for us ; but at present I am unable to say whether they will be hardy enough or not.

Mr. MORRIS.—There is a peculiarity about the growth of Russian apples, that is, they make their growth early in the season, and stop. They do not make a late growth like our American varieties, and I think this is one reason of their hardiness. It is a feature that I think will tend to fit them for our colder sections.

Mr. BEADLE.—There are two or three points with regard to the Russian apples that



need to be noted. First, the trees that were introduced into America by the United States Government were got from the western coast of Russia—what might be called the Baltic coast—near Riga, where the climate is very different from our climate, and very different from the climate in Northern Russia. The apples, too, that were brought from Russia by the American Government were not strictly Russian. They were German apples that had been taken to Russia to be experimented with there, and some of them had been there but a very short time, and had not been thoroughly tested as to the climate; but the American consul who had charge of the matter seemed to think that everything from Russia would just be what they wanted, and so the apples were taken promiscuously from the botanists' lists there and were sent to the United States as Russian. Then as the word "Russian" conveyed the idea of Siberian we thought those trees must be hardy. They were scattered abroad over the United States, and the result has been great disappointment. In the first place, many of them were not hardy, and in the next place many of them were not of good quality; and the result has been that some have denounced the whole of the Russian fruits. Mr. Gibbs went into north-eastern Russia, where the climate is just like ours, dry and hot in summer, cold to freezing the mercury in winter; and he found there a class of apples that, as Mr. Morris has said, make their growth early in the season and then stop—do not push out again—harden up their wood and get perfectly ready for winter. In addition to that the leaf texture was of that peculiar kind—thick and glossy—that would bear the drought—the heat as well as the cold—would bear the extreme changes from a hot, scorching sun to almost freezing weather when night came on. The result is that they have there a class of apple that we may hope will be valuable for our cold north. Now, as to the quality of these apples. We must not expect, from all that I can gather, that they are going to be like our Fameuse or our Pomme Grise, or perhaps many of them equal to our Baldwin, although I think from what Mr. Gibb told me that many of them will be equal to the Baldwin. I think we cannot look for a very high quality in those apples, but that we may expect to find them apples which will be suitable for our cold districts. The Ontario Government have requested the committee of the Association who have charge of the planting at Guelph, in connection with the Agricultural College there, to import from northern Russia scions and trees to a limited extent—a few trees and a few scions of such of these varieties as Mr. Gibb thinks will be likely to be profitable. This is being done; and these will be tested at Guelph, where I am told the thermometer went down this winter to 40 below zero.

Mr. GOLDIE.—I have a few trees, about half a dozen probably, of Russian apples; that is, of the earliest importations by the United States Government; and they are just of the character Mr. Beadle says. I do not think they are any harder than the average run of our own trees here, and the fruit has been very small. Trees that ought to have had at least a bushel of fruit would only have three or four on them. They seem to be very shy bearers.

Mr. WELLINGTON.—There is no question but this importation of Russian apples is in its infancy. There have been mistakes made owing to the loose manner, or perhaps I might say, ignorant manner in which the first scions were obtained. The idea was that because they were Russian they were hardy; but, as Mr. Beadle has stated, the temperature of the Baltic coast is as mild as that of a great portion of Canada. But if we can get apples from a more north-easterly region we shall get apples which can be grown in the colder parts of Canada, where our best fruit cannot be grown; and this is an object which it is desirable to attain. I have in my hand an abstract from a report which Mr. Gibb, who has recently returned from Russia, is about to read to the Montreal Horticultural Society, and in it I notice this: "There have been many drawbacks to the introduction of the Russian apple. Nomenclature in Russia is most confused; that of the department list is no less so. We have duplicates under different names, confusion of names as to types and families, evident mistakes. In Dr. Regel's work on Russian Pomology the lists of synonyms show how confused is the Russian nomenclature. If Spitzenbergs and Northern Spy were synonyms of Golden Russet, the case would be somewhat parallel." That is only one of the drawbacks they have been labouring under with these Russian fruits. But I think that in time we shall be able to sift out those that are not desirable by testing, and that we shall obtain varieties that are good. I have been very much interested in Mr.



Gibb's letters and report since his return from Russia. Through his courtesy I obtained the address of a person in Russia who has the best varieties. We have imported about sixty of them, and I hope after they have been thoroughly tested we shall be able to do a little in the way of stating what varieties of them are desirable.

The PRESIDENT.—The number of letters I have received of late from the northern parts of Ontario and from the North-West on this subject indicates that there is a very widespread desire to get these fruits as soon as they are obtainable.

Mr. BUCKE.—I understand from Mr. Gibb that he has been so far north that the apples and pears and cherries have been so dwarfed by the cold that they were little larger than black currant bushes. So if they can grow apples where the climate is so cold as that, I see no reason why we should not grow them in Canada.

The PRESIDENT.—Mr. Gibb describes the trees in those coldest districts as very small, and says they grow them two or three in a hill.

### PROTECTION FROM COLD.

The next topic to be discussed was the following :—"What is the best method of protecting those plants, shrubs, and trees that are not quite hardy enough to withstand the severe cold of our Canadian winters without protection?"

Mr. WOODWARD.—Our climate is not very cold as a rule ; but my observation is this, that it is not the cold that kills ; it is the sun. I think we will find in ninety-nine cases out of a hundred where a tree is reported to have been killed by the cold that it has been killed most on the side on which the sun shines. If I want to protect any kind of plant in my ground that I am afraid is a little tender I uniformly take care to protect it from the sun, and it will protect itself from the cold. Take almost any plant that will stand the cold at all and put up a board at the south side, or a bundle of corn stacks—anything of that kind—and it will generally stand the cold.

Mr. BUCKE.—The best protection to vines and rosebushes and things of that sort is to lay them down and cover them with soil. It is very difficult to protect any tree that you cannot bend down at all. I have tried protecting peach trees by putting them over on the side and growing them on the cordon system. But I have not succeeded very well in protecting them.

Mr. PARKER, Woodstock.—I have followed the practice that has been indicated by Mr. Bucke with raspberries, turning them down and covering the canes with earth so that the snow would cover them. I have also treated grape-vines in the same way, even those that were hardy enough to stand the cold of a very cold winter. This seems to improve them, or at least to save them from showing a certain amount of weakness during the summer.

Mr. MITCHELL, Innerkip.—In my experience I have found that there is nothing like protecting them with evergreen boughs. I have tried straw and leaves ; and in some seasons there would be mildew and I would lose something in that way. I covered my raspberries this winter altogether with evergreen boughs. Last year I tried leaves and straw. I covered the row with leaves ; and I had a tender rose, the Louis Van Houtte, which wintered very well. I had a hardier rose which was not covered, and it perished. I also cover my blackberry bushes in the same manner.

Mr. BEADLE.—I would like to emphasize what the gentleman from Innerkip says. I have had a great deal of experience in protecting small things, and I have found nothing equal to the evergreens ; and if the plant is so large that you cannot just lay the boughs on it, stick them into the ground before the ground freezes around it, and they make sufficient shelter to protect it. Even sometimes putting a barrel over a plant—nothing but a barrel—seems to smother it ; the plant will come out decayed in the spring.

Mr. WOODWARD.—I think the great error in covering tender roses with boxes, barrels, or anything of that kind—or in fact in mulching strawberries—is in putting the protection on too soon, when the ground is warm and full of moisture. We put this on then and it steams, and when the winter comes on of course it freezes. I first let the ground freeze so as to avoid this excessive steaming and moisture, and then put a box over.

Mr. WELLINGTON.—I would strongly advocate protecting your orchards by wind-

breaks. Plant belts of Norway spruce or arbor vitæ, and that is the best protection you can give to your orchards; you cannot well protect the trees individually. The evergreen will always be a great protection to the orchard. For protecting shrubs and roses there is nothing, I think, to equal the evergreen boughs. Protecting with leaves eight or ten inches deep is a good way.

Mr. GORT.—The great want of this country is belt protection for our orchards. Our native pines are excellent for that purpose. Our spruces and our balsam firs cannot be beaten. We want these around our orchards, around our homes, even around our fields, for protection. It is getting to be more and more the great question of the day, How shall we protect ourselves from those biting, frosty winds that are destroying the life of not only our vegetation but of our animals also?

Mr. GRAHAM.—I would like to ask the gentleman who has just taken his seat what portion of his orchard he would protect by the belts of trees.

Mr. GORT.—I should say that every portion should be protected. Of course the location will make a difference. In some parts of the country we are subject to fierce winds in one direction, and in other parts from other directions. The side toward which the fiercest winds come is the side on which the protection should be most substantially placed; but it would do no harm to have this protection all round the orchard, say 10, or 15, or 20 feet from the fruit trees, and that belt so placed that when the trees are growing up they will thoroughly protect against the winds. I have in my mind now a little belt of pine that is near where I am living, and on the coldest and most fiercely windy day it is quite mild on the sheltered side; and if that is the case when the belt is a small one, the protection would be much greater when the belt was large. Other trees will form a very good protection against the wind, but our evergreens are better for that purpose.

Mr. WRIGHT, Renfrew.—I have had considerable experience in protection. I have repeatedly seen barrels and boxes put over small trees, and over rose bushes and such things, and whenever I employed that means it invariably killed them. Then I undertook to wind the trees about. I found that if I could get my trees to grow for three or four or five years they seemed to get accustomed to the climate, and were hardier than they were in the earlier stages of their growth. So I went to work and bound them all round with a kind of rope made of straw—commenced at the bottom and bound the whole trunk up to the top. I took it off again in the spring, and I then found that everywhere that that rope had gone the bark was just as black as it could be, and there was a spiral groove of green all the way up. I gave that up. Then I put cornstalks around them, thinking I had wound the trees too tightly before; and then the cold winds came, and the snow came; around the root of the tree there was a hollow where there was no snow. The wind seemed to have circled round the tree and blown the snow away. The consequence was the roots were not protected, and the frost went down and killed everything I had attempted to protect in that way. I find the best plan is to take evergreens and protect the roots in a flat way, and then the snow remains there. I find pea straw a remarkably efficient article for protecting with. I can protect better with that than with anything except it be the evergreen boughs. We have to cover all our grapevines every year, and I find that earth is very good for the purpose—the best protection perhaps that we have, unless the fall is very wet. If you are growing your grapes on a wet soil, and your ground is wet in the fall, you will be sure to kill your vines if you cover them in that way; but if the soil is dry, earth is as good as anything you can protect them with. With reference to strawberries, I find that it is not a good thing for me to cover my vines at all. After the frost has come into the ground I cover every single particle of the bed except where the plants are, and then it does better than if we covered the whole ground. We have a good deal of snow, and if we cover the whole ground the plants are likely to smother. I find, as Mr. Woodward says, that it is better to let the frost come before covering.

Mr. STARK.—The protection harbours mice unless the ground is well frozen, and of course mice are very destructive in the orchard. When you cover the plants with leaves I think it would be much the best plan to knock the top out of a barrel, put it over the plant afterwards, and then scatter the leaves in. I have also found in my experience that if you have a grape vine for instance at the front of a house or barn and put boards up



against the grape vine, close together so as to shut off the wind, it is a better protection than earth.

Mr. GRAHAM.—About thirteen or fourteen years ago there was a very severe winter in Michigan, and one of my neighbours had a very fine peach orchard in a good situation, and it was thoroughly protected on the north and west by a very thick undergrowth of oak. During that winter we all thought we were going to lose our peach trees except this gentleman. In the spring it turned out that his orchard was almost entirely killed, although having this protection, while another orchard within a quarter of a mile of him, standing out so as to receive the bleak, cold winds of the north, came out unscathed. From that time up to the present we do not ask for any protection for any of our standard trees. We think that the cold air settled down around his trees behind the protection, and there was not current enough to take it away. If we use any protection at all we have it on the east side of our orchard. I would not have any objection to protection on the east or south; but we will not have any on the north or west. We have proved and demonstrated from that time up to the present that our trees are better to have the full current of air, and we select locations in which they can have that as the most profitable.

Mr. BEADLE.—That remark about southern protection corroborates Mr. Woodward's idea. I think that in certain localities where the cold is not exceedingly intense, as it is up in Lindsay, it is not so much the frost as the sun that injures the plant—on the same principle, I suppose, that if we freeze our hand and take it into a warm room we soon have considerable suffering, but if we stick it into a pail of ice cold water the result will not be so bad.

Mr. STARR.—In the fall I had some geraniums. I got up one morning and found the ground was very much frozen. The geraniums were pretty well frozen too. I took a board and covered some of them to keep off the sun, and those that I did this to perfectly recovered, although they had not been under cover the night before, but those that I did not cover the hot sun after the freezing completely destroyed. So I came to the conclusion that the hot sun upon the frozen plant and ground did much more to destroy than the severe frost.

Mr. GOLDIE.—Any person having an outhouse needs only to have a little earth in it in which to hill up his shrubs for the winter in order to be able to put them out all-right again in the spring. A very small building will hold a great many trees and shrubs. In that way a great many that it would be hopeless to have grow out-doors can be successfully grown, and with much less trouble, I think, than if they were protected in a border.

### NON-PROFESSIONAL FLORICULTURE.

Mr. Frederick Mitchell, Innerkip, read the following paper on the above subject :

In compliance with a request from our respected Secretary, asking me to prepare a paper to be read at this meeting, I have jotted down a few irregular remarks on non-professional floriculture :

As may presently be noticed, I have paid very little attention to order of arrangement, and neither will there be any deep research or profound thought manifested.

The ideas or opinions offered may or may not be correct, as they are entirely and only founded on my own experience or observation; and as such I offer them for whatever they may be worth. As the subject is one of very wide range I can only briefly notice certain leading matters in connection with it, such as a few of the best plants to grow, modes of heating, and expense of conservatories, pottery, soil, insect enemies, who should engage in floriculture, etc., with a few general ideas that happened to come uppermost.

First—as to those who should engage in it: it should be those, and those only, who have at least a small modicum of natural inbred taste or love for flowers. It is almost painful to see what, under more favourable circumstances, might have been beautiful plants struggling for existence in the hands of persons not possessed of this attribute.

All persons who have taste for this pursuit can and should engage in it, but of course in a manner consistent with their means and ability.

The very poorest should engage in it; it is a pleasure within their reach the labourer



or the labourer's wife can produce, and possess, of some varieties of plants, as beautiful specimens as the richest nabob in the land.

The rich should engage in it to a greater extent than they do ; should spend their money freely on it—as freely as they do in yachts, fast horses, etc. ; should think no more of spending a few thousands on some rare plant than they do when spending it on some old manuscript, or piece of china, and should make as complete and costly collections of plants as they do of antiquities or works of art.

Ladies should personally and actively engage in it far more than they do. It should be a particularly congenial employment for them, and they are never more attractive than when engaged in the duties of the conservatory or garden. In short, each and everyone to a greater or less degree should take part in it who can take any pleasure in the beauty of a plant or flower. While on this matter of taste I would condemn an effort that is being made to introduce a false standard of taste, by making certain plants fashionable, and thereby exalt single Dahlias, single Crysanthemums, and several other flowers, both single and double. People who do this have no real taste, and never did have any. Real taste is neither affected nor circumscribed by any such narrow rules. Moreover, there is always plenty of room in this respect in our own persons, in the matter of dress, to show what fools we can be when we want to without encroaching on the beautiful floral world.

With regard to the conservatory, which seems naturally to take precedence at this season of the year—and which is really indispensable in the culture of flowers in our (even to make the best of it) rather wintry country—we are enabled by the use of it to have flowers through all the dreary winter season, to preserve many plants from year to year which we could preserve in no other way, to have a supply of seedlings and other plants ready to transplant to the garden as soon as danger of frost is past, and to grow certain exotic plants which will not succeed in the open air. This need not be so expensive a luxury as many who are not familiar with the subject suppose it to be. Of course fancy conservatories cost fancy prices, but where economy is an object it is possible to build a small one, say of 10 x 15 feet dimensions, with brick smoke flues for heating, for \$30. This can be heated throughout our longest and severest winters, with from two to three cords of wood. If any walls are used other than glass, double boarding with tarred paper between is the best.

Heating it with water where practicable is the best mode practised ; that is, it produces the best results. Heating by steam also produces good results, but is expensive and requires close attention ; it is only when used for heating an adjoining dwelling that it can be used to advantage.

Hot air can often be used with little extra expense in conservatories which form part of a dwelling, but unless attention is paid to obtaining a proper humidity of the air the result will not be satisfactory.

The ordinary method of heating with brick smoke flues is the cheapest, and is to be commended in several ways. The most serious objection to it, however, is that some plants (and noticeable among them is the popular Geranium) will not bloom freely where this mode of heating is used.

One of the first elements of success in the conservatory is good potting soil. Never use soil that has been long in cultivation, such as ordinary garden soil. The best soil can be obtained amongst standing hardwood timber. This will neither bake nor turn sour, as older soils are apt to do. A man with a horse and waggon, and equipped with a coarse screen and shovel, can procure enough good healthy earth in an hour or two to last any ordinary conservatory for a year at least. When preparing to dig it, first rake off the bulk of the undecayed leaves. The vegetable mould with a portion of the surface soil beneath is that which must be appropriated, at the same time using a screen to screen out sticks, etc. This with a very little well-rotted manure will make a soil suitable for almost all plants.

Use fertilizers very sparingly, and with great caution ; it is easier to overfeed some plants than it is to starve them. A flower-loving friend of mine, and who has for years enjoyed the beneficial teaching of this Association, but who, like many of us, must be possessed of more enthusiasm than judgment, lately fed a Chinese Primrose so liberally with superphosphate as even to destroy the pot which it was in. The plant being of course

equally as tender as the pot, succumbed also. This is an extreme case, but there is a great amount of harm done by the injudicious use of fertilizers.

A wise selection of plants in the first place will do much to avoid after disappointment. Choose plants that will require nearly the same degree of temperature. It is quite impossible to grow successfully all kinds of plants in one (and that perhaps a small) conservatory.

The most valuable plants for blooming in midwinter are the Chinese Primrose, Carnation and Cyclamen. These plants take up but little room, as they should all be grown in small pots. They will bloom quite as abundantly without direct sunlight as with it, and do not require a high temperature. The Chinese Primrose is the most valuable of all, and in winter a conservatory is not complete without a large collection of them. Although not the most valuable blooming plants for this season, there are many others that can be made to bloom in midwinter, and are very desirable. Among these are Fuschias (particularly light varieties), Geraniums (where steam or hot water is used for heating), Abutilons, Amaryllis, Cupheas and others. Narcissuses, Hyacinths and Ranunculuses can be made to bloom at any time from midwinter until spring. All the others named can be made to bloom in any or all of the winter months.

Most of our winter blooming plants should be planted outdoors in the summer, and if possible on the north side of a building.

The worst of the indoor pests of the conservatory are the green fly and the red spider. The green fly is a species of aphid, and can be destroyed by applying weak tobacco-water to the plant. The red spider, as it is called, is a very small insect; so small that it is often unnoticed by inexperienced florists even when very numerous. Although called a spider, it has not much the appearance of one. It is very injurious; plants infested with it quickly assume a sickly, blighted appearance. Whale oil soap-suds applied to the underside of the leaves is the best remedy.

And now for a word or two about the garden—and that chiefly to those who are in the earliest stages of floricultural enthusiasm. In the first place, don't attempt too much on the start. One perfect flowering plant is worth more than any number of half-developed, neglected ones. And besides, this should be a pleasure, not a labour. In planting, or in sowing seeds, use some foresight. Consider the effect desired, and use such kinds as will produce it. For a continuous display of bloom, use such plants as Petunias, Geraniums, Phlox (annual), Dianthus (annual) Verbenas, and others. For cutting for bouquets there is nothing so valuable as Feverfew and Matricaria. For show at autumn there is nothing that will equal the Gladiolus, Dahlia, perennial Phlox and Salvia Splendens.

There is far too much of a medley of plants in many of our gardens. In most cases, plants that bloom but once should be planted with several different kinds together and with due regard to succession of bloom, that beds may never appear altogether barren; but plants that bloom continuously generally appear to the best advantage, massed in beds or bunches by themselves. The best soil for a garden is a rather light but not too light soil. It is imperative that it be well-drained, that bulbs or the roots of perennial plants or shrubs may not perish in the winter. Annually enrich the soil with well-rotted manure, and the majority of plants will respond generously. There are, however, exceptions to this rule and notable amongst them is the lily.

But after all the chief requisites in successful floriculture are not in soil or fertilizers, but in the would-be florists themselves. If these possess a never-failing love for flowers, backed up with common sense and quickness of judgment, a certain amount of success will be attained whatever the soil may be or the fertilizers used. In connection with the mention made of a need of a quick, self-reliant judgment, and as an illustration of the want of it, I may cite the case of a lady who lately wrote to the editor of an American horticultural journal, asking advice as to the treatment of a Cyclamen bulb which she had planted, which was sending up its leaves from below; to which the editor replied that the bulb had evidently been planted with the wrong end down, and the proper treatment in this case was to turn it over. A person who is forced to send a thousand miles for advice before turning a Cyclamen bulb over will never attain to prominence in floriculture, nor perhaps in anything else.



The worst insect enemy the out-door florist has to contend against is the omnivorous, disgusting slug, and the ground or root aphid. There has not been anything discovered which will effectually destroy these pests, and at the same time cause no injury to plant life. Common salt will destroy either of these insects, but it is almost as injurious to plants as to insects. Tobacco-water will destroy the aphid, but it is not only injurious to plants but it is also too expensive for ordinary use. The person who shall discover something that will rid us of these pests will indeed be a benefactor to mankind.

As to the culture of the lily, it may be said—to use an hibernianism—there is no such thing, neither cultivation nor susceptibility of improvement. “Consider the lilies of the field how they grow; they toil not, neither do they spin; and yet I say unto you that even Solomon in all his glory was not arrayed like one of these.” These notable and beautiful words which were spoken many centuries ago are generally regarded as an illustration of the futility or uselessness of all earthly efforts and endeavours; but they also contain a true, epitomized representation of the lily itself in its beauty and native intractability. Everyone who has a garden should try the experiment of planting a few lily bulbs. They may not succeed. Lilies cannot be persuaded to grow in some soils and locations; but the experiment is well worth trying. The only special treatment they require is that the bulbs should be planted at least eight or ten inches deep and be kept moderately free from weeds. The very best are the *Lancifolium* varieties—the *Candidum* and the *Auratum* or *Golden-Rayed*.

The only insect enemy is the larvæ of the May beetle. Anyone with a proper soil and location can have lilies; if these natural conditions are favourable it is the easiest grown of any of our flowering plants. The ever popular rose is in most of its characteristics quite the reverse of the lily. Its cultivation is attended with more difficulty and disappointment perhaps than any other flowering plant or shrub. It requires a good soil, and constant manuring. It cannot receive too much petting and nursing. If neglected for a single day in the spring or early summer, it will show the effects of it. It must be protected in the winter, and that just enough; if too lightly, it will freeze; if too heavily, it will rot. It has almost all of the insect enemies of other plants, and also others that are exclusively its own. It is also very prone to mildew; and, altogether, its culture should only be attempted by those who are in the most advanced stages of floricultural enthusiasm. This is not intended, however, to in any way discourage the cultivation of this most beautiful of all flowers. The few who are willing and able to give it the care and attention it requires can and should grow the rose. In concluding these rambling remarks, I may say that horticulture, although not possessing any practical dollars and cents utility, is, at the same time deserving of far more attention than it has hitherto received in Canada. We cannot engage in rigidly practical labour all the time. We all need a certain amount of pleasure and recreation, and there is no better place to seek these things than among the flowers.

MR. GILCHRIST.—As a general rule I find that when people complain of failures in floriculture, it is owing to their having potted in too large pots. They put little slips in six or eight or ten inch pots. The proper potting of plants is a thing that is not very easily learned. It is in the potting that we get the drainage; and if we pot in too large pots there is bad drainage. We commence with very small plants, and gradually bring into use a larger and a larger pot. For instance, if we commence with a three inch pot we take a four inch pot next, and then a five, and then a six. If you turn the plants out of a pot and the roots are black the plants have been too long in the same pot. In regard to soil we find nothing better than turf rotted; that is, turf taken from the roadside, and a little manure with it, and probably a little sand if there is not enough sand in it. We prefer that for almost all plants except for the rose; for that we use it a little heavier and fresher. A great many people have an idea that if they get peaty soil for plants they are all right. There is no greater mistake. We prefer a soil of a yellow nature. In regard to protecting roses in winter I think that the plan that we adopt suits us the best of any. We prune very close. Anyone who has grown roses knows that we get the best flowers and the strongest shoots in that way. We prune very close to the ground, and draw the earth up around the plants in little mounds, which in the spring we take away. I think



if we would prune all our hybrid perpetuals close to the ground we would have better success with them.

Mr. PARKER.—I have not had a great deal of success in the cultivation of flowers and roses, but I have a very simple plan of protecting them. I lay down the rose and cover it with leaves, and when I uncover it in the spring I find that it is quite fresh. In some instances the buds have begun to shape before the leaves are taken off. One season a keen frost came and they were set back, and we had no roses that year. I now adopt the plan of driving a stick down alongside the bush. I then gather the branches together, tie them with a string, and put a hoop around the bottom. I put ordinary rye straw around the inside of that hoop, and then put on another hoop around the top; and I find that that is sufficient protection to enable them to come out all right. My grapevines I cover with earth. Three years ago I took them up; they started very early; there was a late frost, and I had no fruit that year. The next year I covered them with evergreens, and I had not much more success. Last year I allowed them to stay up on the trellises and take their chances, and I had a better crop before the frost came than I had had for the last three years. If you have a wet, warm season and protect them too much you injure them. I think the best plan is to select a fruit that will stand the climate without much protection. If you do that, and do not have to nurse and protect it, I think you will be more successful than if you attempt to cultivate those more tender things. I should have liked to have heard something more about the keeping alive of the best old varieties of fruits which we now have but which are going out of existence, rather than to have heard so much in regard to new fruits as to the value of which people differ so much.

Mr. MORTON, Wingham.—I am an amateur in floriculture, and I think I have had more failures than any other man in the country. But in the course of my experiments in trying to make perfect manures for the smaller fruits I have also experimented on flowers. There is one very beautiful flower that I have had very great success with in the garden, that is the Pansy. I can secure—I can say it without egotism—better flowers in my little garden than I have ever seen on exhibition. I give the plant sufficient room to grow, allow only one flower to grow on each shoot, and pick off every flower but those I want to grow. I am a firm believer in the pruning of flowers as well as of everything else. I think it has a beneficial effect on the growth of the plant. With regard to the grapevine, a friend of mine adopts this plan. He does not lay down his grapevines at all, but he prunes them back to the two lateral branches, and tacks a piece of cotton on the framework on which those are placed, and turns that over to protect them. He says it is not the frost that kills them, but the sun. I am a firm believer in manuring the ground very heavily, if you want to grow good flowers. Some people will say, "Oh, your plant will grow all to top." So it will if you do not look after it and prune it. I have tried to grow roses until I have got sick of it. So many things have come in the way of my growing them that at last I have come to the conclusion that I had not adaptability for growing them. The insects would cover my plants more than my neighbors'. I have tried tobacco water on them, and it has been useless. I have found whale oil soap water the best protection against the fly. The great difficulty in the section where Mr. Wright lives seems to be that the roots freeze. Now, where I am living at present, in the north end of the county of Huron, the severest winter that we have had during the last six years the ground has never been frozen more than a foot deep. In the centre of my garden last year there was not one inch of frost, and the year before I do not think it went over two inches deep. The other day I went out and shovelled up the ground, and there was no frost whatever in the centre of the garden. One year I covered my roses with boxes. I also covered in the same way some raspberry plants, and I do not know whether they got smothered or not. The next year they did not grow, but the roses came through all-right. I think the reason the roses did so well was that they were on a border a foot or so higher than the ground the other plants were on, and that the ground in this border had got frozen, whereas the ground in the centre of my garden had not frozen.

Dr. CROSS.—I never covered plants much. I did try it some years ago. I tried it with grapevines one season, and I had the same experience that a gentleman mentions—that when I took them up the frost killed them. I have come to the conclusion that in

my old age a shrub or a vine that needs protection I shall not attempt to grow. Some years ago I got from our secretary twenty-four varieties of roses at one time. They are all living yet, and have all done very well except for the insects. I prune them moderately closely. I cover the roots with mulch in the fall, and keep them well cultivated. The roses are good. The greatest objection I have to them is that they do not last long enough. The greatest trouble I have had with fruit has been from the blight on pear trees. I planted an orchard of 300 trees about twenty years ago. Two-thirds of it has been planted twice, and part of it six times. I have never lost but one Duchess D'Angouleme from blight. The others have all blighted. The Bartlett withstood the blight the best of all but the Duchess D'Angouleme.

Mr. STARK.—Last year I tried Paris Green on my rose bushes, about a half a teaspoonful to a pail of water sprinkled on them, and I thought it had a very good effect. I have seen a good many letters in the agricultural publications asking which was the best syringe to apply Paris Green with. Well, I think I have found out the best one, and the one which will meet the wants of the community generally. It is a syringe that is being sold very much around here—I do not know what they call it. It is made of tin and has a bowl at the bottom; and it only costs, I think, about a dollar or a dollar-and-a-half. It is fitted with three nozzles. One nozzle throws a spray, another throws a perpendicular shower, and another throws a horizontal shower, so that you can throw the Paris Green over the highest trees in the orchard, and you can apply it to the lowest branches in a very diffused and wide-spread shower. I would like to find out the name of the syringe. I could never find out its name or where it was made.

Mr. GOLDIE.—I think they are made in Hamilton.

Mr. BEADLE.—In partial reply to the question Mr. Stark has raised in regard to the application of Paris Green on rose bushes I would like to lay down this general rule, that any creature whatever that eats the leaf of a plant—I do not mean that eats it underneath, but eats it through—can be killed by an application of a mixture of Paris Green and water in the proportion of a teaspoonful to a pailful of water. But this has not a particle of effect in my experience on the little thrip that attacks the under part of the leaf, for the simple reason that this thrip is not furnished with jaws to eat the substance of the leaf. As to the form of syringe, I generally use the ordinary straight one which is so commonly used in greenhouses, and which can be bought in almost any hardware store. Sometimes I have seen them made by a tinsmith. But I think you can get along very well without a syringe at all. I do not know anything that would prevent one applying that remedy with a whisk. Dip it into the water and Paris Green and use it for sprinkling the bushes.

A MEMBER.—Would you tell us how to destroy the insect you speak of that does not eat the substance?

The PRESIDENT.—I have not yet found anything that is entirely satisfactory. If you put a few live coals under the plant, put a little tobacco on them, and then turn a barrel over the plant the tobacco smoke will kill them. That and a solution of whale-oil soap are the only remedies I can recommend, unless Pyrethrum powder will answer. I have been experimenting with this powder, and am rather favourably impressed with the results; but I am not able to say anything very definite about it yet.

Mr. STARK.—I used the Pyrethrum last year, and I find it has a good effect on house plants, but no perceptible effect on rose bushes. It killed the insects on the house plants effectually. For two years I had excellent crops of plums. I sprinkled the trees with Paris Green, and I have since then had excellent crops of plums; before that I had not any at all. Whether this was owing to the Paris Green or not I am not able to say.

The PRESIDENT.—Last year I sprinkled some trees with a mixture of Paris Green and water about the time the curculio makes its appearance, that is soon after the fruit was set, and I must admit those trees seemed to produce a better crop of fruit in proportion than those that were not sprinkled. I also jarred them, because I had so little confidence in the Paris Green that I was unwilling to neglect any means that might possibly help to destroy the insects.



Mr. STARK.—I commenced the application of the Paris Green before the fruit was formed, and I did not jar the trees at all.

Mr. PARKER.—I saw an account last year in the paper conducted by our secretary of some gentleman in Rochester having been experimenting with Paris Green in his orchard, and I got some Paris Green and put about a teaspoonful to a pail of water, and took an ordinary rubber and brass syringe that I have, and syringed my plum trees for as far as I could reach standing on the ground, and I think it had a very beneficial effect on them—so much so that I had the greatest crop of plums on them this year that I ever saw on them in my life. Sometimes you could cut off eighteen inches of a limb and you could not see the wood, the plums were so thick. I am only afraid that the crop was so great that the trees will not bear so well again, because I did not thin them.

Mr. BEADLE.—I was going to suggest to Mr. Parker that he had better have let the curculios thin the plums out a little. He will not have as good crops of plums in the following years as if he had thinned them out some.

Mr. VROOMAN.—I suppose that in planting out a garden it is desired to get a display of either flowers or shrubs for the season. Then by sowing phlox and verbenas we can get a display from May until the frost in November, and late in the season we can get a good display from the dahlias. If we want a little better bed we can use the coleus. We can get plant protectors at about a dollar or a dollar seventy-five cents a dozen, some of them made of galvanized iron and so constructed as to give plenty of ventilation. You can set your plants out early in the season when you protect them in this way, and thus have very large plants by the middle of June. I believe in getting all we can out of a plant and then throwing it away.

Mr. ROSE, Woodstock.—I do not think that any person who has paid any attention to the subject can have failed to notice and be much pleased with the strides we are making in flower culture. I have lived in this town ten years, and I think the attention now devoted to flowers is at least ten times as great as it was when I first came here. As a consequence, the cultivators of flowers are gaining great proficiency in it. The greatest mistake in growing plants has been in attempting to grow too many; but we have now got pretty well over that, and the greater proportion of the people of this town are now almost as well posted in regard to the proper treatment of single plants as those who ordinarily follow the growing of them as a business. It is true there is a great deal yet to learn. The great trouble is that our seasons vary so much that you cannot calculate to-day what sort of weather you are going to have this day next year, even with the aid of Mr. Vennor. There is so much difference in temperature at certain seasons of the year that with the same covering our plants will some years rot, and other years come out nice and fresh. This matter is one in regard to which every one must use his own judgment.

The PRESIDENT.—We have covered roses with straw and have had them come out nice; and we have covered them with leaves and had the same kind of success.

Mr. WRIGHT.—In protecting with straw we have always used the wheat-straw. It is looser than oat-straw, which it would be dangerous to use. If you would allow me a digression I would like to make a remark with regard to a point brought out by the gentleman from Michigan. My ground is high, and for years I have been free from early frosts in the fall. My corn and tomatoes would escape when those crops on low grounds around town would be destroyed. Last fall mine were cut off when those of my neighbours were not, showing that there must be different currents of air which have different effects on cultivation.

Mr. DEMPSEY.—I have not had much experience in the cultivation of flowers. In rose culture I continued to fail year after year for a great part of my life. Finally I got hold of a very nice work published by the Rev. Mr. Hole, of Scotland, which set me right; and that simply told me to maintain vigour in the plant always and at any expense. A vigorous growth may be maintained under some circumstances by shortening back or by using fertilizers liberally; but in all the hybrid perpetuals I find it is very much better to shorten them. When they bloom in the spring, shorten them in at once and you get a nice autumn bloom. We have no difficulty in protecting our roses. Probably we are not bothered by winds so much as people farther south. At any rate we find that all



that is necessary is to protect the tip end of the plant. Supposing we shade it, invariably we endeavour to protect it from the sun in winter, and our protection is simply to turn the plant over and cover the tops, so that both ends of the plant are protected. Sometimes we use straw or something else; but in every case, if we can, we allow air to circulate under the plant, and we shade the roses when in bloom. Any of you who have never tried it would be astonished with the advantages that are gained by shading—at the extent to which the beautiful tints will be brought out by using a partial shade when the bushes are in flower. This may be easily done by taking some laths, if you do not care about using anything expensive or ornamental to your place, and laying a space off the width of each lath, so that a sufficient amount of sunshine may pass through between them. In this way the rose is shaded part of the time. We find that we get very much prettier roses in that way. If you want to work a long time for the satisfaction of working, go to raising lilies from seed. I crossed the Amaryllis with one of our finest lilies—I do not know how many years ago—and I have been watching them from that time to the present to see them bloom. I got one bulb nearly the size of an apple; I gave it to a friend who took it home, and it bloomed, and was such a beautiful lily that the friend sent a plant back to me; but I have never got the plant to bloom since.

Mr. GILCHRIST.—With regard to the blooming of the Amaryllis, there is sometimes very little difference between success and failure. A few years ago a lot of gentlemen in Guelph sent to Germany for Amaryllis, very expensive ones. They could not get them to bloom, and they sent them to us to see what we could do with them, and we put them in the greenhouse. In every case they had the Amaryllis in the centre of the pot with the earth raised away up around them. They would never grow in that way. All we did was to plant them just on the top of the soil, and we succeeded well with them.

Mr. DEMPSEY.—Invariably we found it necessary in order to succeed to set the bulb right on top of the soil. Our bulbs, we find, are getting down deeper into the soil all the time, and we have to repot—take the soil away from them.

Mr. MORTON.—I would like to ask Mr. Gilchrist whether he ever gives his Amaryllis any season of rest. Does he ever allow them to die down?

Mr. GILCHRIST.—That depends on the variety a good deal. They are all the better of a season of rest. We give them rest through the winter.

Mr. MITCHELL.—The only way that we can succeed with them is to give them a season of rest.

### APPLES AS FOOD FOR STOCK.

The next topic for discussion was, "Would it pay to plant apple trees for the purpose of feeding the fruit to stock, and what are the most profitable for this purpose?"

The PRESIDENT.—I desire to make a remark or two as to the relative values of fruit as food for cattle, compared with other articles of diet. The value of any substance of that sort will depend very much on the proportion of the nutritive elements contained in its composition; and as sugar and starch are the substances which, along with albuminoid matters, chiefly maintain animal life, these are the elements to be chiefly considered. From experiments made by a celebrated German chemist it appears that apples stand tolerably high as a nutritive food. While peaches contain only  $1\frac{1}{5}\%$  per cent. of sugar, apples contain from 8 to 10 per cent. If you add the  $1\frac{1}{5}\%$  per cent. of the sugar contained in peaches to the albuminoids, 7 to 8 per cent., you have about 9 or 10 per cent. of nutritive matter in that fruit. Taking the apple in the same way you have from 12 to 14 per cent. So that I think it may be said that comparing the apple with the peach for this purpose the apple should have the preference. Sugar beets, which are known to be very nutritive to cattle, contain 11.50 of sugar, as compared with 8 to 10 in apples, so that apples do not fall very far short of sugar beets in the proportion of sugar they contain. Of albuminoids sugar beets contain 4.7; apples, 4.2. Taking potatoes, which are occasionally used as food for stock, we find that they contain from 15 to 16 per cent. of starch, and as the starch is converted into grape sugar, before it is assimilated, we may consider it for this purpose as sugar. Of albuminoids, apples contain from 4 to 5 per cent., and potatoes from 2 to 3 per cent. Comparing apples in their nutritive properties with green red clover we find that green red clover contains of carbohydrates, which are assimilable and act in the same

manner as sugar, 8 per cent., whereas the amount of sugar contained in apples is from 8 to 10 per cent. The nutritive grasses contain from 12 to 15 per cent. Looking at the relative proportions of water contained in these different articles, we find that while apples contain from 80 to 85 per cent., red clover contains from 78 to 83, and grass from 70 to 75. When all these figures are considered, it seems reasonable to conclude that where apples are very abundant, and there is no other means of disposing of them to advantage, it would not be an unprofitable way to make use of them to feed them to stock. They would be about equal with sugar beets with regard to their nutritive value.

Mr. BEADLE.—The question we are discussing is the profitableness of raising apples—say sweet apples—for stock. If then our president's premises are correct, that sweet apples and beets are about equal in regard to their nutritive properties, let us see if we can ascertain where the profit lies. How many tons of sugar beets we can grow to the acre, and how many tons of apples? I am not prepared to answer the question myself; but suppose we take it for granted for the sake of argument that they are on a par in that respect. My impression is that I would raise more tons of sugar beets to the acre than of apples. There is more labour in raising the beets; but how many years are we going to be without food for our cattle until we get the apple trees to such a stage that they will be yielding as much food to the acre as sugar beets will. Taking the average life of a man at thirty years, I think the preponderance of opinion will be in favour of growing sugar beets rather than sweet apples for cattle food, and that unless we can find a more remunerative means of disposing of our apples than feeding them to stock we had better grow sugar beets.

Mr. ANDERSON, Blenheim.—About two years ago I had some five or six hundred bushels of apples. I fed them to the cows and also to the pigs. In the case of the cows I found that they increased the milk; the pigs got weak in the back. I was of the opinion that the apples were the reason for this, and I dropped the use of them and the pigs got better. I do not think it will ever pay to feed apples to stock. I do not believe they are nearly as good as turnips.

Mr. GRAY.—I should say certainly that of the sugar beet, if properly cultivated in good land, you would get four times the weight off the acre that you possibly could get of apples. If so it would certainly not pay to raise apples for stock. The refuse apples in an orchard might be used in that way to get rid of them. I do not think we could make it a profitable investment to raise fruit for cattle.

Mr. BEADLE.—Those who heard Mr. Dempsey's remarks early this morning will know that we have got to a point in advance of feeding our surplus apples to cattle. We have got to the point of chopping them all up, skins, cores, refuse apples, and all, and making jelly of them. I was in a factory on the other side and found that out of these they made grape jelly, guava jelly, peach jelly, plum jelly, and every other kind of jelly you could speak of. I said to the man "How on earth do you make all these kinds of jelly out of apples?" "Oh," he said, "You must be very green. We can flavour this to taste like anything we want; the chemists help us out in that."

Mr. HATCH.—My experience in feeding is that by giving the stock a few apples or a few beets you will make them get more good from the other food—by mixing the apples with the other food.

Mr. CROIL.—Mr. Gray did not make any calculation of the comparative weights. Supposing there were twenty-nine trees to the acre, and that they were thirty feet apart. Five barrels would be an average crop. The weight would then be something like 27,000 pounds of apples. A thousand bushels is not a very extraordinary crop of beets, but that would amount to about 80,000 pounds.

Mr. WOODWARD.—I want to say to you that your secretary got into one of the old fogy jelly establishments on the other side. Those that are right up to the mark do not use any apples at all. They can make any kind of jelly you call for and not use any fruit at all. I have fed a great many apples to stock. The mistake that this gentleman made who has just spoken was that he fed too many apples with too little other food. Apples are very valuable; they are worth as much as potatoes or beets to feed to all kinds of stock; but you cannot expect to feed with any profit food that is so much charged with water as apples are and not give some sort of richer food with it. Apples are worth a



good deal more to feed them than to make cider. They are very bad to feed to cattle whole, as they are liable to choke them; but if you feed them to your cattle in the stable you can fix something above their heads so that they cannot get their heads up more than level, and they will not choke.

Mr. DEMPSEY.—Before I was old enough to have anything to do in the matter my father was in the habit of feeding surplus apples to stock, and we tried two pens of pigs of equal age, giving one a feed of apples at noon along with hard food in the evening, and the other pen only hard food, and we found in every instance that the pigs that were fed with the apples grew the best. We have found also that our horses do better if we give them a feed of apples occasionally, say on Sunday; and since we have been doing that they have not required any condition powder.

## CELERY GROWING.

The next item on the programme was as follows:

“Celery growing, is it profitable to the market gardener? What is the best method of growing and blanching? Which are the best varieties for the amateur; for marketing; and what is the best way to pack and keep for winter use?”

Mr. BUCKE.—I believe it has been generally said that the proper soil to grow celery in is black swamp muck. I have seen it grown repeatedly in such soil, and have never seen a bad crop. It grows fine and strong, and the muck does not appear to rust the celery.

Mr. ROSE.—Anyone who wishes to grow celery should not attempt it in dry soil. I have for many years planted more or less celery. Our soil is high and dry, and I have never yet with perhaps one exception had a good crop. It is not as good as what is grown on mucky soil. It does not blanch quite as well, and it is inclined to be tough. I in fact abandoned the cultivation of it last year; but by mistake of one of the men we had a piece planted with it, and the season being a wet one the celery was the best we have had for years. We have a gentleman who lives in the eastern part of the town here, who has a piece of mucky land—it is muck down a foot and a half to two feet in some places—and he grows on that year after year the most magnificent and succulent celery it was ever anybody's pleasure to eat. He grows it in large quantities, and I presume there is no town that has enjoyed better celery than the Woodstock people have for the last few years from that place. In keeping celery for the winter I find very great difficulty. If I put it outside—which the most of those who grow it largely do—put it in trenches—I find great difficulty in getting at it. About five minutes of severe frosty weather damages celery so that it is not fit to eat.

Mr. REILY.—I have been through the Boston market gardens, and seen the method of growing celery there. Some men grow as much as ten acres, a hundred thousand bunches. They grow the Boston market celery; that is the kind that sprouts out from the roots different from any grown here. They sow the seed for it in the spring, in drills about seven feet apart, and take a crop of onions from the ground between. In the fall they ridge it up from three feet and a half on each side of the ridge. They store it in the winter by pitting it and covering the pits with a wooden frame, rough and covered with seaweed, and it keeps growing all winter, and keeps blanching after they put it in the pit. They are not particular about the soil. In Arlington they grow the celery in sandy loam, and they succeed in growing the finest I have ever seen in my life.

Mr. WELLINGTON.—I do not think the growing of celery is so difficult as is the keeping of it. After trying a number of plans—placing it in sand, and stacking it up very compactly together without anything about it, but merely allowing the roots to rest on soil—I found the best way and only way I could keep it perfect was to pack it in damp moss, the same as nurserymen use for their trees and shrubs. I have tried that now three years with success, and the celery seems to keep growing and blanching as it grows, and I cannot buy celery in Toronto equal to what I have on my table every day. We pack it in the damp moss in cases and then put in the cellar. I have never to damp the moss after I put the celery away, and I have to-day as fine celery as I can find in the country. You can get the moss from any ordinary marsh.



Dr. CROSS, St. Catharines.—If the air around celery is too dry the celery will wilt and die ; if too damp it begins to rot at the heart and it rots down. The difficulty about keeping is generally with regard to ventilation. Having myself met with that difficulty year after year I last year constructed a sort of roothouse for the purpose of keeping it in. It was sufficiently large to hold six or eight thousand, had a door at each end, and was built with double walls with sawdust between to exclude the frost. I open the doors or keep them closed, according as the air requires to be drier or moister. If we can have a cool, damp season like the last, celery will grow almost anywhere. If we have dry weather and a dry atmosphere it is very difficult to have it grow at all ; if it does grow it will grow rusty and not be worth much.

Mr. GILCHRIST.—Was that celery that Mr. Wellington put in the cellar blanched ?

Mr. WELLINGTON.—It was only about half blanched when it was dug and put in the moss.

Mr. GILCHRIST.—I think a great many make a mistake in blanching their celery before putting it away.

Mr. ROSE.—What temperature do you keep your cellar at ?

Mr. WELLINGTON.—I have an ordinary cellar such as we have in cities ; a good sized cellar. I keep it as cool as possible without letting frost in.

Mr. GRAY.—Mr. Rose spoke of a person who is a very successful grower of celery in the town of Woodstock ; Mr. Trickey is his name. I asked him the other day how he kept it. He says he does not make much out of it through the summer, but in the winter. He takes up his celery and a great deal of it is quite unblanched. He raises it with as much dirt on the roots as will remain on it, takes it into the root house, and packs it close together standing perpendicular. He says that celery keeps without any difficulty whatever, and continues to blanch and grow. I do not think he puts any soil or moss around it ; only packs it close together, and uses it as he wants it.

Mr. WELLINGTON.—I just pack the moss at the bottom, for an inch or two up.

Mr. GOLDIE.—That plan would hardly suit the large growers. The way they commonly do in New Jersey, and I think about New York too, is to dig a trench and stick it in as closely as they can without putting any earth in at all, and then cover it over with the hay that is taken off the salt meadows. They can then pick it out at any time during the winter. I think the way Mr. Wellington mentions would be the best for small families.

Mr. WOODWARD.—I have a different way of keeping celery from any I have heard mentioned. I used to pack it in sand in boxes. Then I got to packing it with moss. For the last few years I have taken shoe-boxes and made the bottom of them water-tight for about two or three inches up. I have then bored holes in the boxes so as to be sure never to have water come above that. I lift the celery with a moderate amount of soil sticking to it, set it in the boxes on end, and put a little water in so as to puddle the earth. I then set the boxes on top of each other, and take the celery out for use as I require it. I had some of it for my breakfast yesterday morning, and nobody could have asked for better. The secret for growing celery is to have the ground rich and keep it damp.

Mr. ANDERSON.—I think the great point in keeping celery in the winter is to keep it dark. My plan is to place it in soil about four inches deep in the cellar, and then cover it over with straw ; it has kept with me splendidly in that way.

Mr. BEADLE.—I like best the variety of celery that is sometimes called the Prince of Wales—sometimes called the Sandringham dwarf. I think that is the sweetest and nuttiest celery I have tried.

The meeting then adjourned till seven o'clock.

#### 

The proceedings of the evening session were opened with the answering of questions from the question box as follows :—

QUESTION.—Does any gentleman know if the native wild rhododendron grows in this county or adjoining ones ? It has been reported they grow wild in some part of the county south of this place.

The PRESIDENT.—I do not know of its growing in any part of this country. I have seen the plant growing very abundantly in the United States, in Pennsylvania, even in the northern part of that State; but in this country I have not met with it. It is said by Gray to be occasionally found in Canada.

Mr. BEADLE.—I think it was Mr. Leslie who told me that he had seen it growing on Lake Simcoe. I am not confident as to the man, but I am positive as to the place.

QUESTION.—In order to produce good merchantable fruit, must we not resort to proper thinning of the crop?

Mr. BEADLE.—Yes.

QUESTION.—A member who has but a small garden would like to know the names of the best six varieties of pears for amateur growth.

Mr. DEMPSEY.—If it was a locality similar to our own, for one early pear I would plant Manning's Elizabeth. Rostiezer is a very fine one; then the Bartlett, the Doyenne Boussock, the Beurre Hardy, and the Josephine de Malines.

The SECRETARY.—I think I should have tried to put Tyson in there somewhere. Manning's Elizabeth is a beautiful pear. It is small, but delicious.

QUESTION.—Is there any danger in purchasing suckers of plum and cherry trees where the original stock is known to be infected with black knot, and planting them on grounds where the disease has never been known?

Mr. GOTT.—There is great danger. That is the most effectual way to propagate the disease.

#### HONOURS TO VISITORS.

The PRESIDENT.—We have with us this evening three gentlemen who would do honour to any horticultural convention. I allude to Mr. Woodward of Lockport who represents the western New York Fruit Growers' Association; Mr. Charles Garfield, the secretary of the Michigan State Association; and Mr. Scott, a prominent horticulturist of Ann Arbor. On behalf of this Association I beg to tender these gentlemen a cordial welcome to our meeting, and ask them to take seats on the platform.

#### SCHOOL-YARD HORTICULTURE.

The Convention then proceeded to the discussion of the next question on the list of topics, "Is it desirable to interest the children in the cultivation of plants and trees by practical horticulture in the school-yard?"

The PRESIDENT.—I would ask Mr. Garfield if he would be kind enough to lead off in this discussion.

Mr. GARFIELD.—I could just answer the question by saying "yes." A few years ago it seemed to us in Michigan that it would be a very excellent part of our work to interest the children in primary horticulture; but it appeared to us that our society was not really the body to take hold of this thing, because we had a board of education, and a university, and a normal school. We thought we would nudge these people and get them to do the work; but we nudged and nudged without being able to get them to do anything. Then we took hold of it ourselves; and this is the method we took. A good deal of it is familiar to you, perhaps. We first interested Professor Tracy, who is the man above all men in the State of Michigan to have anything to do with floral matters. We took him into our circle and asked him what was to be done; and he said, "Find some enterprising seed firm, if you can, to give the children seeds—to give them to them outright—on condition that the children shall plant them and report results." I took up the idea, and wrote to a number of seed firms, and the seeds were given; but they were given to the school children with the understanding that they should sow them, and that we should get something back from them that would help other children. So we issued a circular which explained exactly what we sent the children and what was to be done with each variety of seeds. We sent about thirty varieties of seeds; and the first year they went into about eighty school districts in the State, and the teacher was made responsible. We had the school director's name in each instance, so that we could enter into direct communication with any district in which seeds were planted. Out of the eighty districts



to which seeds went out we received reports from about sixty the first year ; and we were surprised to find the results that had been brought about by those children, indirect results that we had hardly been trying to reach. Each teacher spoke of the greater ease with which he or she controlled the pupils they had under them, and said that the cultivation of the flowers helped the indoor work. Almost everybody said, "You have begun at the wrong end, because they won't take care of them." They said, "Why don't you have an arbor day and get them to plant trees?" But we found that in every case those children were as careful of those seeds as they were of their school-books. That work has grown from 1879 till the present time, so that now not only dotted here and there through our State we find our school-yards in many places beautified with flower-beds, but a regular arbor day has been established on which we have trees and shrubs planted. For a couple of years we have not pushed the matter with regard to school grounds much, but we are continually getting reports from teachers concerning it which are very favourable. I do not think there is any work which we can do as a horticultural society that is better than this one of interesting the children in the cultivation of flowers and shrubs and trees, because of the good it will do not only in cultivating their tastes but in giving them information as primary horticulturists which will help them afterwards in work such as you and I are doing.

Mr. BEADLE.—How much land have you usually in connection with your rural school-houses?

Mr. GARFIELD.—I do not think it averages over half an acre. A great many of the teachers reported that there was no place to put the seeds except close to the school-houses.

Mr. WRIGHT.—I was a school teacher for seven years, and enjoyed it well, and I can tell you how I managed this thing. I came to the conclusion that our school-house and our grounds looked rather uninviting, so I said one night, "I want all the children to stay in after school." They wondered what in the world was wrong; but after school was over I said, "Now we have got a new school-house; the trustees have put up a nice building for us here; I will tell you what I propose. There are four windows on this side of the house; I want those all filled with flowers. Now, how many can bring me a plant to-morrow?" The next morning to my utter astonishment every window on that side of the house was filled with flowers, and plants. The sills were not quite large enough, so I got boards and screwed them on to the sills, and when the flowers and plants were put on them the windows looked very nice indeed. I told the children that those were not my plants—that they were theirs, and that they must attend to them. So the next time it happened to rain I told them "Now, you had better carry these out and they will get nicely washed." They did so, and got very much interested. Formerly there used to be the greatest uproar in the school-room at noon time, but now they would not run about it for fear they might knock some of these plants out of the windows and destroy them. I remember one of the roughest and most uncouth boys I had in the school knocked one of those pots down and broke it, and he immediately sat down and began to cry. I went to him and said "Don't; it is your plant; it is not mine; you can bring another one, and it will be all right." I do not think anything I ever did in that school so toned down the rough boys in it as getting those plants there. This was down at Lachine; and they had very many *jours d'obligation*—holy days—down there; and when it was cold on those days we required fire to keep the flowers from freezing. The trustees said they would give us coal for it if the boys would take turns in keeping the fire up. This was agreed to, and each boy when it would be his turn would be there early in the morning and get the place warm. The holiday season came on, and I said, "What are we going to do with these plants?" One little girl said, "We will get paper bags and put over them and take them home." So each of them did that, and the plants were just as fresh and nice when I came back at the end of my holiday season as when I went away. Then when the springtime came we took a small portion of the yard, and I got the boys to clear it of stones, to bring manure up there, and to fix it up nicely. They then went and got seeds themselves—their parents gave them to them—and we took some geraniums that were in full bloom and planted them out there; and then the children went to the St. Lawrence, which was not far, and brought water in pails and kept them



watered. I am now endeavouring, along with Mr. Smallfield, one of our trustees in Renfrew, to have plants set out in the school-ground there. We have them already introduced into the school-room, and now we are going to try them in the open ground ; and a prize has been offered by our agricultural association for the best collection of flowers that have been raised in school-grounds.

Mr. BEADLE.—I never taught school in my life ; but the more I think of it, the more I think there is great need in this Province of something being done in this direction. I have believed what Mr. Wright has said without having seen it or having it come as directly to me as Mr. Wright has given it this evening—that the result would be beneficial upon the school discipline, beneficial upon the children—particularly the boys—in toning down their natural roughness. I think the benefit would go still further. I think it would be beneficial in creating a taste in both boys and girls for plants and flowers. I think that that taste would last them longer than their school days, that it would grow with their growth and strengthen with their strength, and that when they have homes of their own they will want to adorn those homes and make them pleasant and attractive, because they have learned the lesson of beauty in their school days and in their school grounds ; and I believe that is as much a part of the education that we need to give our children as teaching them their a b c's or teaching them their three r's. Now, what we can do in this matter is what is agitating my mind. I have no occasion to think as to whether it is desirable to do it. I am fully persuaded that it is desirable that we bring about as soon as possible a great improvement all over our country. I can find places not a great way from St. Catharines where there are still to-day farmers well off, comfortable as can be, but if you want to go to the front door of their house you will have to go through the barnyard to get there. I know several such places. I think we can have a better taste than that ; and I believe that if we can only establish a little more taste among our rural population, so that our farmers will plant some trees about their houses and perhaps some flowers also, and so that we can get them to plant some roadside trees too, we shall get the whole country so transformed in its appearance—nice lawns and flower beds surrounding our farmers' residences, pleasant shade trees, our roads without fences as in some parts of Europe—that the value of our farms will be increased ten times more than they can be in any other way. I do not think, however, that we can accomplish that with the older heads ; we have to wait till another generation grows up. Therefore I am strongly of opinion we must go into our schools and begin there, and see whether in them we cannot bring out a taste for flowers and agriculture which will develop and grow. I believe if we could make our school grounds beautiful we would gain a great point. I brought away from the Horticultural society at Rochester the other day a very interesting drawing by J. J. Thomas, which he produced there, showing how the school grounds could be laid out with a few trees and with everything pleasant about them. It was very neatly got up. I intended bringing it with me, but I forgot it. However, you can picture it to yourself, a school ground with a few trees planted in it and here and there a flower or two, and can easily imagine how much more interesting that would make the school to every scholar—how much more pleasant it would be to them—how much better they would go to school to such places, than to the bleak, barren wastes that their school grounds are to-day. I feel ashamed of our school boards throughout the country that they have not wakened up to this before now.

Mr. WRIGHT.—You have got to begin with the teachers. If you have a real, true teacher in your school the children are fully impressed in their own minds that he or she is the greatest man or woman that walks upon the face of the earth. Thinking them so, they believe them implicitly ; and if they tell the children these grounds look bad and that they can make them look nicer, they will begin and help the teacher. Then you know that every father and mother believe that what their children do is exactly right ; and if the children go home and tell their parents, "Mr. So-and-So wants us to bring some seeds to help to make the grounds look well," the parents will give them to them. And if the trustees see that the teacher is really in earnest, and that the children are in earnest, they will do what they want as far as it is reasonable.

Mr. WOODWARD.—I have had a little experience in the ornamentation of school grounds, and some of the first lessons I remember were lessons in horticulture and pomology.

The teacher used occasionally to send us out and have us select a good, strong specimen of the birch ; sometimes it was ironwood ; and if we could not get either of those handy, we would get an apple branch. I have loved apples ever since, and I have never since seen a good specimen of birch or ironwood that my blood has not tingled. We have one of the finest schoolyards to-day in western New York, and it was made so by the work and energy of two youngsters, of whom I was one. I was about fourteen or fifteen years old, and the other was younger. I believe we ought to teach botany in every common school in Canada and the United States. That should be one of the fundamental elements of education. And we ought to teach horticulture and pomology also. It is ridiculous that our children go out into the world without knowing enough to distinguish one plant from another by its leaves and flowers. It is easier for little fellows to learn that than a great many other things which they do learn, but which are of no use to them when they grow up. By teaching them these subjects you can easily excite in them a desire to grow these things for themselves. By such meetings as this, by writing the matter up in the agricultural press, and, if necessary, going to the Legislature and insisting on these things being taught, we can make a great change in one generation.

Mr. DENTON.—I admired and thoroughly approved of the way in which Mr. Wright brought the matter before us. It is never a question of means so much as it is a question of interesting the teacher and the child in the work. Now, in regard to the London school board. Two years ago it was hinted to some of the teachers how much better the grounds would look with flower beds in them. Why, that was splendid ! The very idea of having flower beds there ! But they must come to the board with a petition for flowers and plants and for a man to arrange the flower beds for them. Now, that would not interest the children. I hope this matter will be brought before the boards. It is quite true that many of our school grounds are gloomy and disagreeable places, which the children are glad to get away from ; but if the ornamentation of the grounds can be brought about in this way it will give them a charm and an interest beyond anything I know of.

Mr. CRAIG.—Having been connected a few years ago with the school system as local superintendent of East Zorra, and being cognizant to some extent of the nature of the grounds around the school-houses, I can endorse what some gentlemen have said with regard to their sterility, barrenness, and lack of loveliness. At the same time the limited amount of ground belonging to each school is so curtailed by the amount apportioned to the school-house and its surroundings that I do not very well see how any scheme to turn the play grounds into ornamental gardens could be carried out. The high school ground in Simcoe is very highly ornamented. I have no doubt the inhabitants of Woodstock will see to it by-and-by that their high school grounds are also beautified and ornamented in a similar form. When children sit in the school-house from nine o'clock till half past twelve they want a romp, and now they have either to go into the play ground or the public road. It seems to me that it would not do to turn our present school grounds into ornamental gardens to encourage the taste for horticulture and arboriculture. For many years back, there has been a feeling abroad among both those interested in the advance of agriculture and those interested in the advance of horticulture that children should be educated in this matter, and made to see that it conferred dignity and credit on them to pursue these avocations. That is all right enough ; but as to whether the grounds around our country school-houses are the right spheres for the exercise of the educational influences to be exerted in that behalf, is a point in regard to which I have doubts. As Mr. Beadle remarked, a good many of us here are old men, and it is with the rising generation that the advancement of the interests of fruit-growing, flower-growing, arboriculture and all that is to lie ; yet any influences we can bring to bear on our scholastic institutions in the cultivation of taste through the study of these, ought to be encouraged.

Mr. SAWTELL.—I have known this county now nearly forty years. When we first came to it we had nothing but log school-houses. They gave way to frame, and in time they have given way to brick school-houses, and I think the average quantity of land would be something more than half an acre—it would be at least that. We very seldom find less than half an acre, and very often it is an acre. Around many of the school-houses there have been shade trees planted, and in some cases also flower gardens. These are not so placed as to take up the playground, but are between the school-house and the



road. I believe that the initiative should be taken in this matter by the Inspector, and if he could not get the study of botany introduced into the schools he might at least get some of the teachers to take it up.

The PRESIDENT.—I do not think any of the gentlemen who have spoken entertain the idea of turning the play-yard into an ornamental ground; but their view is that the grounds might be shaded by trees so that they might thereby be made pleasanter as play-grounds, and that at the same time they might be ornamented by having flower beds in some out-of-the-way place where they would not interfere with the play-ground. I fully sympathise with the opinion as to the propriety of teaching this branch of husbandry in the schools, and I think nothing could be added to the curriculum we now have that would produce better results than the teaching of practical botany, beginning instruction in it with the aid of such plants as could be grown in the school grounds. This way of teaching it would at once interest both the children and the teacher. It is no credit to our Province that so large a proportion not only of the children but of the grown people know so little of the weeds they tread upon. There is no branch the study of which would have so good an influence on the minds of the children, or train them better in methods of practical observation, than the science of botany and its kindred science, entomology. We should know something about the insects which affect our plants, our crops, our fruits; and the two sciences should go hand in hand.

Mr. BUCKE.—In Ottawa I suppose we have one of the prettiest gardens that there is in the country in front of our normal and model schools. They have beautiful trees and flowers planted, and along with them there are fountains and statuary, so that there I think the matter has not been lost sight of by the educational department. I should like however to see the children more interested in the work.

Mr. GARFIELD.—I was school inspector and had thirteen schools to visit two years ago. I went round to them on foot; it was in the month of May when our wild flowers were the best; I made it a point to pick some and take them into the school in every case to see if the teacher knew anything about them, and in the thirteen schools there was not one of the teachers who knew one of them. So I thought it would be pretty uphill work to get the children interested when the teachers knew so little about the subject. I thought the place to begin was at the normal school, where our teachers were made.

Mr. WOODWARD.—This thing is very catching. If you will get the trustees of one of your school districts to go and ornament the yard—get them growing flowers so that it will be remarked—it will spread to the surrounding districts. You might get your county agricultural associations to offer a premium to the school district that kept its yard in the best shape each year. I would take the playground for a flower garden.

The PRESIDENT.—We have in our series of school books a little book called "Elements of Botany," written by Professor Macoun and Mr. Spotton. It begins with taking some of our wild flowers, and it is very interesting. It would form an excellent basis for the work of which we have been speaking.

Mr. WRIGHT.—It is already authorized and used in all the High Schools in the Province. An idea that has just struck me is that we might require that in our model schools every teacher should pass an examination in botany, or give an object lesson in botany before the teachers.

Mr. WOODWARD.—And horticulture too,

Mr. WRIGHT.—Yes, perhaps horticulture too.

Mr. GRAY.—We must take our teachers as they are. If we could have them as we wished them to be they would all be men of taste; but they are too old to be educated now. We might, however, bring our children up to have taste and to exercise it in beautifying the country. The cultivation of flowers will bring to our homes that comfort, that pleasure, and that elevation of mind which no money can buy.

## HARDY PERENNIALS

The Convention then proceeded to a consideration of "The best hardy perennial flowering plants for general cultivation."



Mr. GOLDIE.—There are a great many of our native wild plants that I think are more worthy of cultivation than many of the imported ones that are commonly grown, though possibly they would not be so suitable for general cultivation. Take the *Cypripediums*. What are more beautiful than the three principal ones we find in our Province. The *Trilliums* also are very interesting. Take the *Trillium grandiflorum* and the *erectum*; they are very common in the woods, and they are very good flowers although they do not last long. Then the *Lobelias* are very well worthy of cultivation.

Mr. BEADLE.—Have you tried the *Lobelia cardinalis* in your own grounds?

Mr. GOLDIE.—Yes; you want to follow nature as far as possible in growing these plants. The *Trilliums* are as easily grown as any daffodil.

Mr. BEADLE.—They respond to cultivation very readily, and increase their size very much.

Mr. GOLDIE.—Another very fine tribe of plants is the milkweeds, the *Asclepias*. Take the *Asclepias tuberosa*; I do not know a more beautiful plant. It thrives in a light sandy soil. Another class is the *Liliums*. We have two or three very fine native lilies. They are very fine plants for any culture. The *canadensis* and the *philadelphicum* are just as fine as many of the imported lilies that are so much run after. I am confident if these were brought into more general cultivation that those growing them would feel very much more interested in them than in their exotic relatives. There are also the *Gentians*, another very interesting class of plants that are unfortunately getting very scarce here. I scarcely know where you would go now to look for them; but formerly they were very common, before the country was so much cleared up, along the little brooks and streams. As to the foreign herbaceous plants fit for the garden, I do not know that I can speak very fully. I would like to hear a few words from some of the other gentlemen present.

The PRESIDENT.—I quite concur in all that Mr. Goldie has said in regard to the varieties of plants which he has referred to, and would add in regard to the fringed gentian that it is perhaps one of the most beautiful of all the gentians. The last time I saw it growing was on the cliffs at Niagara, and I believe it is quite common there yet. It was so two or three years ago. At the opening of spring we have our *Sanguinaria canadensis*, the blood root. It belongs to the poppy family, and unfortunately has the same habit that poppies have of soon shedding its petals; but while they last the flowers are very beautiful indeed. Another plant very similar to that is what is known as the twin-leaf, the *Jeffersonia diphylla*. That, cultivated alongside of the blood-root, makes another very interesting variety for spring flowering. I got my boys interested at home while they were young in planting wild flowers, gave each of them a piece of ground in the back garden which they undertook to look after, and they succeeded in bringing together quite a large number of species of wild flowers. The *Trilliums* and the *Hepaticas* did very well, the *Hepaticas* especially were a perfect mass of flowers as soon as the spring opened. The flowers rise and expand before the foliage, and they are really charming. There are some double *Hepaticas* which in cultivation are beautiful little hardy perennial plants. The *columbines* are great favourites of mine. I do not know a more beautiful flower, either native or imported, than our native columbine. It is now introduced into many of the gardens of Europe, and is thought to be one of the most graceful flowers they have. The blue columbine, from the Rocky mountains, and the *Achrysantha* have been lately added to our varieties here. Then we have the dog-toothed violet, the leaves of which are beautifully spotted. The flowers are not very common, for the reason that the roots are bulbous, and it takes the plant some years to accumulate strength enough to throw up a flower; but you will occasionally find a flower, and when you do it is very beautiful. In British Columbia there are one or two species of this genus which are hardy, and which would be a very great acquisition. The *Lilium canadensis* is in every respect a desirable plant. I think too much cannot be said in favour of the ladies' slippers—*Cypripediums*. I have found it rather difficult, however, to get the purple ones to flower. Their natural habitat is in the swamps. You find them among moss and other plants that delight in damp situations, and there they flourish in a most charming manner. It is not easy to provide plants of that kind in an ordinary garden with such surroundings as are necessary to their growth. There are a number of the wild asters which are worthy

of cultivation ; but these come in late in the season and do not attract our attention so much as the spring flowers.

### QUESTION BOX.

On the following morning the proceedings commenced with the answering of questions from the box.

QUESTION.—What is the best way of planting evergreens for wind-breaks, in single or double rows, and how far apart in the rows ; how far between the rows ?

Mr. MORRIS.—My plan would be to plant two or three rows. I would prefer for one row—say the central row—European larch ; and I do not know anything better than Norway spruce for a row on each side. I think I would plant the rows about four feet apart, and the trees about three or four feet apart in the row, and cultivate for four or five years.

The PRESIDENT.—Wouldn't your larch soon get so ungainly and bulky as to crowd the others out ? It is a free grower.

Mr. MORRIS.—I think not.

Mr. ANDERSON.—I planted an orchard about twenty-five years ago and trees for a wind-break around it, and at the present moment they are forty feet high. I planted them eight feet apart, and they are a complete protection all around the orchard they are too much so, in my opinion. I planted them just singly went into the bush and dug them up with just some sod on. I expected a good number of them to die, but they did not.

Mr. GOTT.—Do they crowd one another ?

Mr. ANDERSON.—Yes ; the branches interlace.

Mr. WOODWARD.—There is quite a difference with us between a screen and a wind-break. If I planted I would set the trees six feet apart and six feet apart in the row. I think Norway spruce if crowded becomes unsightly after a while. That we would call a screen. For a windbreak we would plant two rows, the trees fifteen feet apart, breaking joints. For the last few years our orchard trees have done best where they were partly exposed to the wind. What we think is required is something to break the winds.

Mr. GOLDIE.—If a wind-break is wanted and there is room, I would prefer planting Norway Spruce twenty feet apart. I would plant three rows, setting them twenty feet apart. If they are crowded, the branches will die off more or less.

QUESTION.—Will the Russian Mulberry stand the cold of our Canadian winters, and if so, will it answer for the purpose of making hedges ?

Mr. WOODWARD.—I do not see anything about it that would make it suitable for a hedge.

Mr. BEADLE.—I think I could make a hedge of it. If you do not prune it, it will make a hedge close to the ground. So far as the style of growth of the tree is concerned it looks as if it might make a hedge. At our place the thermometer rarely goes down to 18 below zero. Some of my neighbours said this winter that it went down to 18 below zero, but mine only went down to 12 below.

Mr. WRIGHT.—I have two plants of the Russian Mulberry. I have only wintered them once previous to this winter. Last winter the tops killed down to the snow line. I am inclined to think it will not be hardy enough.

Mr. BUCKE.—I had some of the Russian Mulberries last winter at Ottawa, and they stood the winter well enough ; but they are not very high.

The PRESIDENT.—In London I have tried them, and they appear to do pretty well. They branch close to the ground, and it seems to me as if they might be useful for hedge plants ; but it is perhaps too soon to express an opinion.

QUESTION.—I see in report about Russian Mulberry, Catalpa, etc., can these be got here and at a reasonable price ?

Mr. BEADLE.—He means the *Catalpa Speciosa*, I think. The *Catalpa Bignonoides* cannot be grown in Canada ; in the County of Lincoln we can grow it with a little care when it is young. I have trees of it in my grounds which flower every year ; but in a territory where the mercury goes lower than it does with us I do not think the *Catalpa Bignonoides* would do.



The PRESIDENT.—We have the thermometer down occasionally to 25 below zero, and the Mulberry and Catalpa Speciosa seem to stand that temperature, but the Bignonoides does not—it sometimes winter-kills.

QUESTION.—What is the best hedge plant for farm use, and is it advisable to plant hedges on the farm in preference to other kinds of fences?

Mr. GOTT.—We have tried the Honey Locust very successfully. It makes an effectual hedge. For farm use we would confine ourselves to it alone as a defensive hedge.

The PRESIDENT.—What would it cost to keep a Honey Locust hedge in order? wouldn't it cost more than to keep a fence in order?

Mr. GOTT.—I think not; but how long it could be kept in order is another question. Continuous clipping would be necessary, and that would injure the life of the plants. Another thing is that the hedges take so much of the vitality of the soil on both sides of them that our farmers object to them. A great objection is that so much snow falls in our climate that hedges afford a harbour for mice, and they girdle the plants.

Mr. BEADLE.—I had some experience with Honey Locust, and a hedge of it costs more than it would to build an iron fence. What do you want of fences anyway? Let us get rid of our fences; they are a costly tax upon the agricultural community of this country—millions of dollars—and they do not know it.

Mr. GARFIELD.—We are working toward the end that Secretary Beadle seeks. We had a stock law that read something to the effect that each township should decide for itself whether they should allow stock to run at large or not; and if any township by a majority vote said no stock should run in the road that was the law. But we found that we could hardly get any township except near the city to vote that, and we then twisted it round the other way, and made it the law that no cattle should run at large unless the township should vote that they should be allowed. At the outset, this results in our country having a shabby appearance, because they are simply letting the fences go down and doing nothing with them; but I think in time they will pick up their old fences.

QUESTION.—Are honey bees of any value to fruit blossoms; if so, in what way?

Mr. DEMPSEY.—I am afraid that is a difficult question to answer. I have a block of dwarf apple trees that we pet considerably from the fact that it is an experimental block. Under those trees we have had this year from one to three colonies of bees, and we have had nearly as many apples from one hundred of those little dwarf trees as we had from five thousand standard trees. Whether the bees had anything to do with it or not I cannot say. The dwarf trees were all bending with the fruit, while the standard trees in the orchard, which was just in bearing, were almost without fruit.

QUESTION.—A lady desires to know the names of ten varieties of Monthly Roses which this Association would recommend as among the best.

Mr. WELLINGTON.—Agrippina, Hermosa, Catharine Hermet, Isabella Sprunt, Madame Bravay, Marie Guillot, Odorata, Perle des Jardines, Madame Lambert, and Celine Forester.

QUESTION.—What is the effect of east winds in the spring of the year on our fruits and fruit blossoms? Are they as a rule prejudicial?

Mr. HICKLING.—During the past season I have observed that on the east side of fruit trees there was no fruit. I have noticed it in many places in our locality where the fruit seemed to be entirely confined to the west side of the tree. This was attributed to the east winds, or rather to the sun striking on the orchard before the frost was entirely out. I have an opinion that our orchards require to be protected from the east—north-east especially—if we wish to get fruit. That is, in our northern localities.

Mr. GOTT.—Those east winds are dreadful things. I know the year before last it took off a large quantity of peaches. Had we had protection on the east side of our orchard at that time—a small orchard—we think it would have been worth \$200 to us.

Mr. HATCH.—Some twenty-five or thirty years ago I planted around three sides of the orchard peach trees, and on the east side and north side they all died from freezing, while on the west side they mostly lived.

Mr. GRAY.—I have observed for several years when the prevailing east wind came at a certain time, just before or just at the time that the fruit was forming from the blossom, trees exposed to the wind were very much blighted. I think it has a blighting effect on



everything it touches at certain times. Perhaps it is only for a few days it will have that effect ; but I have always found that wherever there has been an east wind for a while at that particular time, nearly the whole of the fruit was destroyed. Trees close by, but sheltered from the wind, bore a good crop ; therefore, it is clear to my mind that that wind has a very blighting effect on fruit. I would rather protect my fruit from the east wind than from the west wind.

Mr. BEADLE.—I do not know very much of the effect of the east wind on fruit, but I remember reading a few years ago about the east wind having a very blighting effect on the wheat crop of Egypt in the days of Pharaoh.

## CULTURE OF SMALL FRUITS FOR MARKET.

Mr. E. Morris here read a paper on the above subject as follows :

The business of growing small fruits for market, a branch of horticulture long neglected in Ontario, is just assuming the importance its merits deserve, and with the establishing of canning and drying factories throughout the country, we may still look forward to its expansion in the future in a much greater proportion than in the past.

About ten years ago the business was mainly confined to a few hundred acres of strawberries about Oakville and a few small vineyards in the vicinity of Hamilton, and to show the views of the people generally at that time, I will relate the experience of one who commenced in a small way in the Township of Pelham (one of the foremost in horticulture in Ontario). The first year his planting was about an acre each of strawberries, raspberries, blackberries and grapes. The questions mainly asked by the neighbours who turned out in strong force to see this new departure, were, "Where do you expect to find market for so many berries, and how are you going to get them all picked?" all leaving with a good deal of sympathy for the owner for loss of time and money that would follow. Their adverse criticisms did not discourage, but created a determination to succeed. The second year, before a berry was picked, two acres more of each, raspberries and strawberries, were set to the still greater astonishment of the neighbours. The third year the work of picking and marketing commenced in earnest, realizing about \$1,500 gross, \$1,200 net (since then Pelham has become noted for its large plantations of small fruits and vineyards) ; of course the high prices obtained at that time insured much larger profits than can be expected at the present, however, with soil adapted and proper management the business of small fruit growing is still, and will continue to be, one of the most profitable. Ten acres, well managed, will give as much net profit as one hundred from ordinary farming.

To insure success the party should have a natural ability for the work ; he must be possessed of perseverance, also tact for the management of help, and for these men who possess these qualifications, and particularly those having a large family of boys and girls, between the ages of ten and twenty, that he wishes to give light and healthy out-of-door employment to, will certainly find the growing of small fruit the most interesting and remunerative in which he can engage.

The soil must be in all cases dry or made so by draining, and in a fair state of fertility.

In speaking of varieties and manner of growing, and on soil worth, and only used for ordinary farm crops, we shall confine ourselves to those sorts best adapted for market purposes, and therefore will only speak of a few varieties, leaving out many new sorts that are too expensive to buy and plant in a large way, some of which in a short time will be of the leading sorts.

*Of Strawberries* we choose the following :—Wilson's Albany, Jas. Vick, Crescent Seedling and Manchester, the two last are pistillate and require to be planted alternately (four rows of each) with one of the two sorts first mentioned.

The following varieties frequently do well where soil and location are favourable, and might be tried in smaller quantities : Chas. Downing, Jersey Queen, Cumberland Triumph, and Capt. Jack.

The ground should be thoroughly prepared by deep plowing, followed by harrowing and cultivating until it is fine and mellow, after which it should be well rolled; this preparation will pack the soil so that a good plowman can cut a straight furrow, leaving it clean and smooth on the landside for planting against; these furrows should be three and a half feet apart and plants set fifteen to eighteen inches.

The planter holding the plant in position with the left hand and drawing a little soil against it with the right, the furrow is then filled about two-thirds with a hoe, and packed by tramping with the feet, filling up afterwards even with the top of the crown with loose soil.

This planting should be done as early in the spring as the soil is dry enough to work properly. For small plantings a hoe and spade may be used instead of the plow. In case of drought or late planting the roots of the plants should be thoroughly puddled before setting.

The first season all blossoms should be cut off and no fruit allowed to set. The care consists principally in keeping the soil loose and moist, by frequent cultivatings between the rows, which at the same time throws the runners in, thus forming a matted row, the rows should be kept clean by weeding, with the aid of a hoe where it can be used.

As soon in the fall as the ground is frozen sufficiently to bear a wagon the plantation should receive a light covering of straw scattered over the plants very evenly and only heavy enough to not entirely hide them; the following spring as soon as growth commences the straw should be raked between the rows and allowed to remain as a mulch until after bearing.

*Raspberries, Red*—A deep loam or sandy soil should be selected. The Cuthbert, where hardy enough is acknowledged by all to stand at the head of the list for medium to late, where the Cuthbert winter-kills, the Brandywine and Turner should be substituted. For early, the Hansell is promising.

Instead of planting in the common hedge row system, would recommend setting in hills three by four feet, ground previously marked that distance as for corn planting; during cultivation work both ways for the first two seasons, using a cultivator with knife to cut off all suckers, which is absolutely necessary to secure a good crop of fruit.

The second season after planting, about one-third of a crop may be expected. The third year, after the ground is thoroughly cultivated both ways, the plants will be large enough, so that the tops of each hill should be divided. Half the canes should be bent over in the row overlapping those of half the next, which should be bent to meet; the tops are then tied in the centre. The hills should be tied in the direction of the wide rows, thus leaving nearly four feet clear for cultivation during the season. The advantages of this mode are: the plants are kept from being broken down by wind storms, the fruit is kept up from the soil and more convenient for picking, also leaving the centre of the hill open so that the new growth will not be shaded, thus securing a more stocky and better growth for bearing the following season, reducing the expense of cultivation, as hardly any hoeing will be required.

The old bearing canes should be cut short soon after bearing, which will allow the ground being cultivated both ways again.

*Raspberries Black*.—Same soil as the red varieties, although if there is a difference in your planting ground, would give the blacks the heavier soil, having in view a plot of ground of the same size to plant the following year. It is not necessary to multiply varieties when the two best will cover the whole season of ripening. Souhegan for early to medium, and Gregg medium to late; our preference decidedly in favour of the former, as being the most productive and hardy of all the black-caps, having originated and succeeding well in the cold locality of Mt. Vernon, New Hampshire.

Mark the ground as for the reds, with the exception of having the hills three feet by six, instead of three by four; plant two or three tips in each hill about six inches apart in the form of a triangle.

Cultivate both ways during the fore part of the season; pinch off all the tips of the young plants when they reach the height of from eight to twelve inches, causing them to branch, forming a low stocky head.

The second year plot No. 2 should be set out, and should receive the same treatment.

at the same age that we describe for No. 1. This year, plot No. 1, can only be cultivated one way, and care must be taken to pinch off the tops of the young growth as soon as they show themselves over the growth of the previous year, as this is very important to success. The plantation should be gone over several times, and the pinching followed up. The fruit will turn out about one-third of a crop. The third season the branches should be cut in to an even length early in the spring, leaving them about two to two and one-half feet from the main stem. The latter part of May or 1st of June, cultivate, and thoroughly hoe, and if convenient it will pay well to give a mulching of straw in the row. Leave the new growth this season without pinching, which will act as a benefit in giving the fruit a little shade.

Early in the spring of the fourth year the *entire* top should be cut off even with the ground, and two or three forks full of manure with about a pint of unleached wood ashes scattered around each hill, the ashes may be increased to one quart if no manure is used.

This season give the plot thorough cultivation, and do not neglect the pinching back with a view of getting a strong growth, with a low bushy top for bearing the following year. Cut down each plot every other year, in this manner you will keep your plantation vigorous and renewed, obtaining more fruit in one season than in two, by allowing them to bear every year, while expense of cultivation and cutting out old canes, is reduced to one-half of that by practising the ordinary way, when black-caps cease to be profitable after the fourth year.

Near canning factories I would add Schaffers Colossal to the list of profitable sorts for growing; this is not strictly a black-cap, being a very dark red, although they should have the same treatment as just described for the black-caps; however, I would advise planting one foot further apart each way, on account of their much stronger growth, and put but one to two plants in a hill.

*Blackberries.*—Soil, sandy or sandy loam, which must be very dry naturally for the most tender kinds. Quite a number of new varieties are now being put on the market, most of which are tender, while the fruit of those that are hardy is generally small in size.

Perhaps the best two kinds for market purposes of the old standard sorts are Kittatinny, where the climate is mild enough to grow peaches, and Snyder for the colder sections.

The best manner for planting the blackberry is in rows eight feet apart, setting the plants from two to three feet in the row. The cultivation of the Kittatinny must be discontinued after the first or second week in July, to check the growth and harden up the wood for the following winter. The Snyder being so hardy may be given richer ground, and cultivation be continued later, and on account of this advantage in its favour it may prove more profitable even in mild sections than the Kittatinny.

Care should be taken to pinch off tip ends of all new growth, when three feet high to induce throwing out side branches, and the old wood cut out after the bearing season. The mistake is made by many in allowing the suckers of both blackberries and red raspberries to grow for sale or for planting out. This plan very much reduces the yield of fruit, and also enfeebles the plants for the following season's fruiting. Those wishing to grow their own plants should have small plots for that particular purpose.

*Currants and Gooseberries.*—Are very profitable for some markets. Gooseberries if allowed to remain on the bushes until after the raspberry season is over, come into market when there is no other fruit offered, and will then find a ready sale at good prices.

They require a soil inclined to clay and it should be very rich. Plant three by five feet and cultivate both ways. It is necessary to thin and cut out the old wood occasionally, in order to keep the plants renewed with good bearing wood.

Of the varieties of Gooseberries in common cultivation would prefer Downing and Smith's Improved, and the White Smith in localities where it succeeds.

Of Currants on strong soil, Cherry or La Versallaise for red, White Grape or Imperial for white, and Lee's Prolific for black, while many consider Fertile d'Angers, Victoria or Prince Albert equally or more profitable.

We have condensed the matter of this paper, in order not to make it tedious to its



hearers, and find we shall have to leave out the Grape, the most important and interesting branch.

To speak of its many varieties, and the soil adapted to each, would require a paper wholly devoted to the subject.

Mr. SCOTT, Michigan.—In growing raspberries and blackberries we do not use any mulch of any kind. We use the four tines spading fork. We find that loosens the soil and acts as mulching. Of course it does not bring the roots to the surface as mulching does. In raspberries we do not want the canes nearer than six inches apart unless they are in hills, and then there would be three or four in each hill. We grow altogether on the row system. I do not think the majority of people who grow small fruits thin and prune them close enough. The heavier the soil the better I like it. I can grow large berries on it, and they are not so likely to be affected by the drought, and do not winter-kill. The Kittatinny we have discarded; it is not hardy enough. The Snyder bears every year, but it must have very thorough pruning. I aim to have the canes not closer than from ten to twelve inches apart; and I pinch them back in June, which makes them throw out laterals. Then I do not leave these laterals over 18 inches long at the outside; a foot would be better.

Mr. BEADLE.—Here is a question just exactly in point. "Please give the names of three varieties of strawberries, red raspberries, and blackcaps that will be the most profitable to raise for market."

Mr. SCOTT.—I think Mr. Morris has answered that perfectly. The varieties I would name would be the varieties he has given in his paper, although in blackberries he mentions only the Kittatinny and the Snyder. I would mention the Taylor's Prolific. The Wilson's Albany is conceded to be really the strawberry. I would also name the Crescent and the Manchester, or James Vick. The Manchester, I think, is going to be a good berry. The Cuthbert is our red raspberry. We grow that almost exclusively, and find it pays us better than almost any other variety. I would add the Turner and the Brandywine. For blackcaps I raise the Souhegan and the Tyler. If you have one you have about the other. They are just about the same. I have them growing side by side, and I can detect very little difference. I make more money off the Gregg than off any other raspberry that I have on my ground.

Mr. BEADLE.—Do you know a blackcap by the name of the Ohio?

Mr. SCOTT.—Yes; it is a trifle earlier than the Gregg; but I can make so much more money off the Gregg, that I only raise a small plot of the Ohio. It is a very good berry for drying.

A MEMBER.—What have you to say to the old Philadelphia red?

Mr. SCOTT.—I have discarded it altogether because I could make more money out of the Gregg.

Mr. MORTON.—Do you know a berry called the American red?

Mr. SCOTT.—I do; on the right kind of soil it might do well; but you have to attend it like a baby. He speaks of making more money off ten acres than you can off a hundred acre farm. I believe I can make more money off five acres than off a hundred acres.

Mr. MORRIS.—I would like to ask Mr. Scott if he has ever tried the plan in growing blackcaps of growing the wood one year and fruiting the next.

Mr. SCOTT.—No, I have not; I want a crop every year, and I get it. I thin them thoroughly so as not to have them overbear. I get a hundred bushels to the acre every year. For taking out the old canes, which I do immediately after they have done fruiting, I use a hook about a quarter of an inch thick and an inch wide put on a stick two and a half to three feet long. By having a whetstone along with you, you can keep it sharp, and just pull these canes right out.

Mr. MORTON.—Have you ever tried the hill system as opposed to the row system?

Mr. SCOTT.—Yes; I have given the hill system up altogether.

Mr. MORTON.—By the row system what would be the width apart?

Mr. SCOTT.—In raspberries I have them six feet apart; in blackcaps from seven to eight.

The PRESIDENT.—Have you had any experience with the white varieties of raspberries? How has the Caroline succeeded with you?

Mr. SCOTT.—We have succeeded with it; but it does not do very well. It would do for an amateur variety.

Mr. BEADLE.—What do you think of its quality?

Mr. SCOTT.—I like it very well.

Mr. BUCKE.—How long does Mr. Scott keep his bed in bearing with continuous fruiting.

Mr. SCOTT.—My oldest bed is six years old.

A MEMBER.—Have you tried the Crimson Beauty?

Mr. SCOTT.—I have not tested it; not under that name.

Mr. A. M. SMITH.—Have you fruited the Queen City or Highland Hardy?

Mr. SCOTT.—I have fruited the Highland Hardy, and I do not find it profitable enough. It will bear a medium crop, but the berry is rather small. I do not like it very much.

A MEMBER.—Have you tried the Reliance?

Mr. SCOTT.—No; I consider it a soft berry from what I have seen of it.

Mr. BEADLE.—It is supposed to be a seedling of the Philadelphia.

Mr. WOODWARD.—I suppose it was Mr. Scott's extreme Yankee modesty which prevented him from telling what his receipts were on two acres of blackberries. His net receipts on two acres were two hundred dollars.

Mr. SCOTT.—There is a good deal in the picking. I do not allow my pickers to carry a basket in their hands at all. They use one hand for opening the bushes and the other for picking. Not a berry goes off my place unless it is sorted; and in the Detroit market a neighbour and myself average over a dollar more a bushel than others that send from the same place. The lowest price I sold them at was six dollars a bushel. I market them in crates. The baskets hold a full quart.

Mr. GOTT.—As I understand from Mr. Scott, he grows his canes in rows, and grows them six inches apart in the rows. Now, the point arises how are the enormous yields got that are sometimes reported. From about an acre we thought we had a pretty heavy crop—we had fifteen to sixteen hundred quarts; but we get accounts from some of our raspberry buyers of crops of six thousand quarts. I cannot understand how that quantity can be put on an acre. I supposed from the reading of it it was close culture, mass culture. I know I saw some raspberry patches myself in which the bushes were massed; there was just a little space for walking between the rows, and the whole of the rest was a mass of canes; but I could not say that they were vigorous, fruit-producing canes.

Mr. SCOTT.—They are not in single rows. There will probably be an average of three or four plants in width. The rows are at least a foot and a half wide. I think the reason most people do not get as good yields as they ought to of raspberries, is that they do not thin out the young canes. The idea of Mr. Morris that it is best to have a little patch to raise your plants on is the right one. My average yield of raspberries will be from eighty to a hundred bushels to an acre.

Mr. BEADLE.—Mr. Scott said he sorted his berries before sending them to market. Now, the great trouble with many of our fruit growers is this,—they will send their berries to market just as the pickers have a mind to bring them. The result of that is that they get five or six cents a quart for them. They get all they deserve. Now, see the difference that careful picking makes. This gentleman tells us that he averages six dollars a bushel, which is eighteen and three quarter cents a quart.

Mr. SCOTT.—I would rather have women than girls or boys to pick. Then having the right kind of foreman with them they will pick clean. In sorting we do not handle every berry, but I have the sorters pour them gradually into the basket.

Mr. A. M. SMITH.—What is your soil?

Mr. SCOTT.—It is a clay loam. I laid out a new piece in a terribly heavy soil; you could hardly break it up with a mallet. The next year we had a very severe winter; but out of that patch there was not a cane killed; and if the whole patch had yielded as that did it would have brought me in a thousand dollars an acre.

Mr. GOLDIE.—At what time do you thin out the surplus canes?

Mr. SCOTT.—In the spring or fall.

Mr. GOLDIE.—How long do you top them?

Mr. SCOTT.—I top them from three to three and a half feet high when I cut them back in the spring. In general when they are growing I would rather nip them at two feet than have them three.

Mr. GOLDIE.—Do you top them in the summer when they are growing?

Mr. SCOTT.—Yes.

Mr. GOLDIE.—And allow them to throw out laterals?

Mr. SCOTT.—Yes; for cutting back the lateral canes I have a light pair of shears. The blade is about ten inches to a foot long, and the handle is very light. If one cane is a little more slender than another I nip it off. I do not top the laterals at all; but the cane stalk I cut off. The laterals I do not cut off until late in the fall.

Mr. GOLDIE.—Do you cut the laterals close off, or do you leave a portion of them?

Mr. SCOTT. From a foot to eighteen inches, not over eighteen inches.

Mr. MORTON.—Are your snows deep over there?

Mr. SCOTT.—This winter it is ten inches to a foot.

Mr. MORTON.—Do you tie them up at all?

Mr. SCOTT.—Not at all.

Mr. SUTHERLAND.—Wilson's Albany and the Crescent Seedling are the most profitable strawberries for me.

Mr. PARKER.—Mr. Sutherland told me that he was very much disappointed in cutting off the runners. He said he had experimented by allowing one and in some cases two runners, and he found it to increase the crop.

Mr. SUTHERLAND.—I have cut off the runners some years, and they would run too much to foliage.

The PRESIDENT.—Do you grow in the row system or in hills?

Mr. SUTHERLAND.—Some I grow in the row system and some in hills. I have thirty-two different kinds of berries; but the Wilson's Albany and the Crescent Seedling are the most profitable. Almost any other kind is better, though. The Sharpless, the Charles Downing and the Triumph de Gand are of better quality.

Mr. A. M. SMITH.—Have you tried Mr. Arnold's seedlings?

Mr. SUTHERLAND.—Yes; I have four of his; but they do not do with me. They sun scald.

Mr. WOODWARD.—Mr. Gott wonders at the reports of the yield of raspberries. Now, if he would go down into Delaware and Southern New Jersey, and see the way they grow raspberries there, he would not be surprised to see them grow up to seven or eight thousand quarts to the acre. They stand six or eight inches apart in the row. The laterals are cut off, and then there is a regular top to each little bush, which they cut off about a foot long—shear it right out; and then these throw out laterals and put on the berries. Then when the pickers are at work, they do not seem to be moving along at all, but they seem to be filling crates up all the time. Before the laterals were trimmed in the spring I could hardly touch them with my hat. I know a man at Camden Station who has about eighty acres of raspberries, and who has made his fortune out of them—Cuthbert raspberries. They use barnyard manure and fertilizers. They use large quantities of lime made from burning oyster shells.

Mr. MITCHELL.—Off a piece of strawberries five feet wide, the rows only a foot apart and twenty feet long, I have picked a hundred quarts in the season. I may say that when I commenced in a small way to grow gooseberries, I only purchased one Downing bush, but it was a pretty good sized one. I planted it and took very good care of it, and the next year I filled a half gallon measure four times from it. The next year I would have had more, but they increased the size of the measure to imperial measure.

Mr. MORTON.—I would like to ask any strawberry growers who have had a rampant growth, if they have tried wood ashes? I tried bone dust one year and ashes the next year, and whether it was the one or the other, it had the effect of forming more fruit and seemingly of checking the rampant growth.

Mr. DEMPSEY.—I have used wood ashes on small fruits ever since I have been engaged in growing them. Four years ago we tried bone superphosphate and bone dust, using five hundred pounds of each to the acre, and we applied wood ashes on two acres adjoining the ground that we used the superphosphate and bone dust on, and the result



was that we had six hundred quarts in the one case, while in the other we had but three. One of my neighbours, who lives five or six miles from my fruit garden, told me that he had half an acre of Wilson's Albany strawberries last year that he had given extra care to. He had manured very highly, but had used stable manure. He is a gentleman who has never used any of those artificial manures, and from that half-acre he picked nearly seven thousand quarts of strawberries. I tell this simply to let you understand that my opinion is that there is more profit in cultivating well and manuring highly a small piece of ground covered with small fruits, than in cultivating a large area and doing it by half. This gentleman has been trying different varieties for a number of years, but he was telling me the other day that he would not plant anything but Wilson's Albany after this. I would plant Crescent Seedling, because I get more money out of it.

### THE GARDEN.

Mr. John Croil read the following paper :—

In compliance with request I have prepared a few remarks on gardening. I will not trespass on your time with an apology further than to say they are intended for beginners, such as have yet to learn there is pleasure and profit in the pursuit.

Many tell us they have no time for garden work. I do not believe the Almighty ever placed a man in such a situation. The same wise Being who thought it not good for man to be alone, deemed it good for him to have a garden; that was God's first gift to him—Genesis 2nd chapter, 7th and 8th verse. How that fair spot in Eden was arranged we know not, but, planned by God's own hands, it must have been like all his works, beautiful.

Some look on gardening as attended with much trouble. Is there anything worth having that costs not trouble? And are not the hardest earned pleasures often the sweetest?

True, the wise man says : I made me gardens and orchards, and planted in them all kinds of fruit, etc., winding up with the assurance that all was "vanity and vexation of spirit." And so it will be with you, friends, and with me, whenever, like Solomon, we attempt to derive unmingled satisfaction from any of the world's employments or amusements. Others plead their ground is not suitable, or their space too limited. Perhaps the taste is lacking; try and cultivate it.

The *American Agriculturist* says : "The most successful gardeners are those whose preparatory work is most complete." Bearing this in mind see that your implements are in good repair.

If your garden reel is not in order, it is a simple matter to make a wooden one; it will answer every purpose. The hot-bed frames and sash probably want repairs. Seed boxes are easily made out of old tea boxes sawed into flats three inches deep. A tin or zinc band round the corners will prevent their spreading. Have your manure and earth ready for the hot-beds. These, and many other little matters, will be good employment for some of these rough days, and will much lessen the hurry of spring. Study the seed catalogues, make your selection, and order at once. Clubbing with some of your neighbours, you will be able to purchase at reduced rates.

A word now on the laying out of your kitchen garden. Remember, I am speaking of gardening for profit, borrowing no man's system, acting on information common to you all, with the little experience that I have earned. I think it best to keep the fowls in their yard. If you allow them to run at large you will require a sufficient fence to exclude them, otherwise you may have a wire trellis for grape vines as an enclosure. On the north side a six foot close board fence will afford shelter, and it, too, may be covered with vines.

The garden should be convenient to the house. It may be sheltered, but not shaded by trees. Fortunately most vegetables thrive on any ordinary soil; perhaps the best is a sandy loam. Thorough drainage is absolutely necessary. The size will be regulated by the requirements of the family, and the quantity of vegetables you can profitably dispose of. While many may be well suited with much less, an acre laid out in the way we will suggest will not be found too much for most farms, and will, we think, after paying all

extra working expenses, yield a return at least double that can be had from the usual farm crops. As to shape it may be as your taste or circumstances dictate, a square or parallelogram as convenient as any. Dispensing altogether with fruit trees, the proper place for which is the orchard, unless it be a few dwarf trees along the outer side, the ground may be ploughed in half a day. Supposing this to have been thoroughly done, and manured in the fall, let it be well harrowed, levelled, and stones picked. Lay off a portion on the south side in rows, enough for a full supply of black and red raspberries, the former four or five and the latter three feet apart in the row; gooseberries and currants next in rows, bushes five feet apart each way. As to varieties of the above and vegetables following, I will only mention kinds I have been in the habit of planting and found good, and refer you to the *Horticulturist* for full information.

Black raspberries I have, but not yet fruited. The Philadelphia red, hardy as an oak, very prolific and good. The cherry and white grape currants have done well with me. Fay's prolific has not yet fruited with me; it looks well on paper; I have no doubt it will be an improvement. This is all I can say of Lee's prolific black currant. Hellebore (white) mixed with water, about two tablespoonfuls to a pail, is certain destruction to the currant worm. Apply with a whisk.

Mildew has been a great drawback to the cultivation of Gooseberries in our locality. Sulphur dusted on the bushes at intervals during spring, I have found beneficial. The Houghton's Seedling and Downing have never mildewed with me. Next to the above commence your vegetables in rows; avoid the old fashioned method of dividing off into small beds. I never see the farmer's wife straining her back over these patches, but I think she must feel in all its intensity the force of the words, "in the sweat of thy face thou shalt eat bread." Those of you who have been in the habit of using a seed-sower know more of its working than I can tell you. Occasionally, I have used one, but on the whole have been better satisfied with the slower method of sowing by hand. A man and smart boy, *better if they're both smart*, will put in a large piece in a day. We start with peas.—The ground well harrowed, and raked with a steel rake, set your line, a *good strong one*, fifty feet is none too long. I use for marking the furrows a three cornered iron made out of an old hoe, two inches wide at the top. Work this along the line, walking backwards, at each step placing your left foot on the line, to prevent its moving, you can make your furrows very quickly. Drop your peas, I *speak of the dwarf kinds*, about two inches apart, they should be set at least three inches deep; cover with the rake. I sow Bliss's American Wonder, and will no other, till I find a better. Continue sowing at intervals of two weeks to have a supply for the season. With a ten feet pole at each end of the line, space out for rows of lettuce, early and late; parsnips, beets, carrots, onions, beans, sage, summer-savory, etc. Sixteen to eighteen inches is a good distance apart for the rows. In this cold north we start our melons in frames, some of these are large, twelve by six feet, and are placed over the rhubarb plants in the fall, and then left till the melon plants, raised in pots in the hot-beds are ready for them. These frames we fill up with lettuce plants, previously raised in the hot-beds. They will stand as much heat as the melons, and come in early.

Next (still in rows) plant your early potatoes twenty-seven inches between the rows. I prefer single eyes set eight inches deep, ten inches apart.

Plant your tomatoes and melons next, provided the danger of frost is over; one plant of tomatoes and two of melons to the hill, four or five feet apart. You still want celery and corn. Some plant celery on the surface, instead of trenches, I prefer the latter, not too deep, say eight inches, a good supply of well-rotted manure, thoroughly incorporated with the soil. If you have more than one trench, let them be at least five feet apart. I have reserved corn for the last, that is in rows along the north side, as it would too much shade vegetables if they were on the north side of the corn.

The remaining space between the celery and the corn you have for a strawberry bed, rhubarb and asparagus. Reserve the corner of this lot for hot-beds, tool-house etc.

The following kinds I have found good:—Cabbage, Jersey Wakefield for early, and Quintal Drumhead for late; cauliflower, early dwarf Erfurt; carrots, scarlet intermediate; cucumbers, white spine; celery, golden dwarf; corn, Moore's early sweet; beets, dark red Egyptian (early) and Carter's perfection salad (late); musk-melons, bay view; water-



melons, ice cream; onions, large red Wethersfield and Danver's Yellow; potatoes, Beauty of Hebron; parsnips, long smooth.

Arranged in the way we have endeavoured to describe, you have a large garden easily managed. The principal tools are a good spade, cast-steel rake and scuffle hoe. This last a very inexpensive implement I find a *sine qua non* in the garden; yet, strange to say many of our neighbours never saw such an implement. It is just the thing for these long rows, start with it as soon as you can see the rows, you will be surprised how quickly you can get over the ground with it. I have always carried in my pocket a notebook, principally of Fall work to prepare for winter, and winter-work for spring, it will guide you in the multiplicity of work, to do the most needful first. Besides this you want a garden diary, furnish yourself with a three or four quire folio bound book, it will cost little; enter therein every thing as sowed, and set aside a portion of it for remarks; you may have failed or been successful. Note results and profit by them.

To wind up these straggling suggestions let me add, in all your work be thorough. Remember whatever is worth doing is worth doing well. Cultivate friendly intercourse with your neighbour; some lesson you'll learn from him, repay it in the same coin.

Mr. WOODWARD.—With regard to implements for cultivation, we have found on the other side that a man with one of these light steel garden rakes with nine or ten teeth and those not very wide will do as much work in ten minutes as he could do in half an hour, with a hoe, and do it easier, and it kills the weeds thoroughly.

Mr. BEADLE.—And not only kills the weeds but tills the soil better than it can be done in any other way.

Mr. SCOTT.—For some years our beets were too large; but I found that if instead of sowing them with the other vegetables—parsnips and carrots—I sowed them about a month later I got them a reasonable size and much better for cooking.

Mr. A. M. SMITH.—There was some question asked with regard to wheel hoes or cultivators. Perhaps some of our American friends could give us some information about them.

Mr. GARFIELD—I have a wheeled cultivator, and I like it very much. In sowing peas I can make a row just as fast as I can walk and sow my peas and turn round and cover them. I use the same instrument to advantage, also as a border iron around my paths and drives. I had always previously to cut them either with a spade or with an ordinary hoe, but I found that by going to the blacksmith's shop and spending twenty-five cents I got a sharp attachment made which does the work nicely. This is a recent thing. It is manufactured at Hastings.

Mr. GILCHRIST.—I have had a little experience with wheel hoes, and I find that with it we can do as much work in one day as we could in six with the scuffle hoe. We have used both the Planet Junior and the Matthews (?), and we find the Planet Junior best adapted for very small plants, such as onions just coming through the ground. It takes away the weeds from both sides. We use different teeth when they get higher up. We never use the old hand hoe unless the weeds happen to get very large. I did not think the implement combined all the qualities that we required, and I got one made which I think is still better than the Planet Junior or the Matthews. I see there are quite a number advertised now which will perhaps be superior.

Mr. CROIL.—May I ask what kind of soil you use this on? I have one, and I thought I was going to save a great deal by it. Well, I worked an acre of peas with it. The soil was pretty mellow, and it worked pretty well; but apart from that I would not exchange a scuffle hoe for it. It would not work on hard ground at all. If you take the rake in time it will destroy the weeds; but the hoe will do it more effectually.

Mr. BEADLE.—Not more effectually if you take it in time.

Mr. SCOTT.—If you go over the ground first with your hoe and then rake off the weeds you will find it the most effectual, I think. I bought one of these hoes last year, and I find that if the ground is pretty dry it does pretty well, but that it very easily clogs up, and that in heavy ground it will not do well at all. I found that considering the labour it required to drive it, the work it did was not equal to that of the scuffle hoe and the rake. There is another combined wheeled hoe and cultivator that answers very well.



It is a more expensive implement. It costs about thirteen dollars. I have heard it does very good work.

Mr. MITCHELL.—I thoroughly endorse what Mr. Croil says about the Dutch hoe or push hoe. I wonder it is not used a great deal more than it is. Of course you do not want to walk over the ground. Mr. Croil seems a little in doubt as to Lee's Prolific currant. I have tried it now for three years, and I think for family use it is the currant of all. I have the Ogden's Black, the Black English and the Black Naples, and as a proof that we find it the best, we have now more currants from it than we need to use, and we have given those from the other three away to our friends.

Mr. GRAHAM.—With regard to those garden implements, having run a market garden now for the last fifteen years, I have used a considerable number of those instruments, and I find the Planet Junior a very good implement in the garden, especially for carrots, beets, and that kind of plants—but only for the first going through. After that I use another implement made in Philadelphia; I think it is Holbrook's. That is a very excellent implement for running through the second time, and one that a man will make great headway with. It stirs the soil very effectually, especially if taken before the plants make much of an appearance. I have also used another wheel hoe. It is one with a very light frame; the two handles are not over an inch in thickness, and perhaps an inch and a half in width; the wheels are also very light. There is besides a hoe made with two wings that extend about ten inches. It is very light, and a man can run it any depth he likes. That also makes very excellent headway. A man can run it along as fast as he has a mind to walk.

Mr. A. M. SMITH.—In regard to Lee's Prolific currant, I have heard it condemned in some quarters, and I think that results from the fact that there have been two different varieties sent out as Lee's currant. At least I have received two as that. The first one I bought tasted like the Black Naples.

Mr. PARKER.—I would like to hear the opinion of some gentleman present as to the best way of firming the ground after the seeds have been put in.

Mr. GILCHRIST.—That depends a good deal on the soil and other circumstances. If the soil is very light you want to firm it, and firming it with your feet is about the best way you can do it in a small garden. If you have a garden roller it is better; but early in the spring you do not require it. It is with the later crops you want to firm the ground. With all fine seeds, the ground requires to be well firmed. Very heavy land does not require it so much.

## ORNAMENTAL TREES AND SHRUBS.

Mr. James Goldie read a paper on the above subject, as follows:—

We believe the time has come when more general interest should be taken in rare and beautiful trees and shrubs, suitable for general cultivation in Canada. We in Canada have been far behind England in trying to grow anything but the easily obtained and hardy common trees and shrubs, most of them being quite unsuitable for the lawn or shrubbery. Lately more interest has been taken, and in consequence many fine things have been introduced and tested, but generally speaking, the old order of things still prevails, and Poplars, Willows, and other coarse and unsuitable trees are too much used. During the past few years I have given a good deal of attention to this matter, and have been testing some of the newer introductions and hope to prove that many of them will be quite suitable for our climate, and although we can never hope to grow the fine broad-leaved evergreens that make the parks and gardens of England so attractive, we have yet a great many things to fall back upon, and to be thankful for.

Very few of the Coniferae of the mountain region of India or those from Oregon and British Columbia will succeed with us. Generally speaking, we may hope to succeed better with deciduous trees than with evergreens, as they mostly ripen up their wood in preparation for a season of rest better than many evergreens, and are thus enabled to withstand the extreme cold of winter. Many evergreens also, if planted in the full glare of the summer sun, will not thrive nearly as well as if placed in a more cool and shady spot. The extreme dryness of our climate is certainly a great drawback to successful evergreen culture.

I will note a few things I have grown during the past year or two, and I may say that whatever will grow in the district around Guelph, may be considered to be hardy enough for all the older settled parts of Ontario. Guelph being over eleven hundred feet above the sea, has a very harsh and severe climate, and nothing that is any way tender will stand it. The common *Thuja Occidentalis*, with its many varieties, is one of the hardiest and most useful evergreens we have. Some of the varieties are very beautiful when grown as specimens. I have *Globosa*, low-growing, light green in colour, and compact and globular in form; *Hoveyi* foliage light yellowish green, compact in growth: Douglass fern-leaved, fern-like in foliage and of a somewhat stiff habit; *Siberian*, a compact upright grower, fine for a specimen tree, and the very best we have for an evergreen hedge. *Vervaeana*, a fine yellow variegated variety; *Lutea*, the finest yellow one I have seen. This I think will be a very pleasing variety. Ellwanger's dwarf, Tom Thumb, a low growing fine leaved one, something like a heath in foliage, fine for edgings or small beds: Little Gem, sent out by Douglass & Son of Waukegan. This one is well named, it is a perfect gem, more like a *Lycopod* than an *Arbor Vitæ*, never growing more than a few inches high. There are many more varieties, but these are all that I can confidently recommend.

One of the most beautiful class of late introduction is the *Retinosporas*, some of them growing to the size of trees, others more like a giant *Lycopod*. They are all a most desirable class, but unfortunately very few of them will stand with us. *Retinospora obtusa* is the most hardy I have tried, and is apparently as hardy as an *Arbor Vitæ*, which it much resembles, only much finer in the foliage. *Plumosa*, tolerably hardy if planted in a cool, well sheltered and rather shady spot. *Ericoides* has always been so well protected with snow that I cannot pronounce it hardy until further trial. *Filifera*, *Filicoides*, *Leptoclada*, and *Lycopodioides* have all been so protected with snow the past two winters that I cannot pronounce on their hardiness if exposed to the inclemency of a severe winter without protection. They are all so beautiful that they will be a great acquisition if they prove hardy. *Retinospora squarrosa*, I think, will be hardy. In a communication from Mr. Hogg, he classes this and *obtusa* as two of the most hardy ones likely to stand our winters.

The next very interesting class I come to is the *Junipers*. There are a great many varieties amongst them, every way suited to our climate. They are particularly well adapted to the evergreen border and the rockery. *Juniperus Chinensis* stands well. *Oblonga* is very pretty and hardy. *Prostrata* is a fine trailing species and very suitable for rockwork. *Squamata* is one of the finest rockery ones we have. *Tamariscifolia*, a low growing one, something like the *Sabina*. *Canadensis* or *Alpina*, a native low growing, spreading species, very fine for all kinds of rockwork, and too little valued, perhaps because it is so common. It grows freely along the upper lakes and in various parts of the country. The well known *Sabina* is a very useful species. The variegated variety of this species is very handsome. *Virginiana* commonly gets the tips of its young wood touched with the frost, otherwise it stands well.

*Chamaecyparis spherioidea*, the White Cedar of the Middle States, has not stood satisfactorily with me, and I am afraid it will have to be discarded. Another of the failures is the Nootka Sound Cypress, which I am sorry for. It may stand at Niagara, but will not do here. All of the *Biotas* I have had to discard. They are too tender to stand our winters; also the English yew in all its varieties. The common native one, *Taxus Canadensis*, makes a fine little evergreen for a shady border and is well worthy of more general cultivation. *Taxus adpressa* from Japan is a very hardy yew. It is a small low growing shrub, and has stood well with me. *Taxus cuspidata*, another Japan novelty, I have not tried, but it will no doubt prove perfectly hardy. The *Podocarpus Japonica*, which can well take the place of the yew, I have not tested myself, but in the neighbourhood of London it seems to stand well, and it is one that Mr. Hogg classes as very hardy and likely to suit us. The beautiful *Cupressus Lawsoniana* has with me been all killed above the snow line. It is a source of great regret that this lovely evergreen in all its varieties has to be given up. It is just possible that in the Niagara district it may prove hardy enough to stand the winter, but certainly in this vicinity it will do no good.

A very interesting class for the lawn and border is the small dwarf varieties of the



Norway Spruce, some of them hardly growing higher than ten or twelve inches, and very close and compact. I have several varieties of them and find them all as hardy as the parent species.

*Mahonia aquifolium* is a very nice small evergreen for clumps and shady borders. It is worthy of more general cultivation. When properly attended to it forms quite a good sized shrub. Everybody knows the Norway Spruce and Austrian Pine, they are the most hardy and useful of all the Conifere we have, either for shelter or ornament. What can be more beautiful than a fine well-grown specimen tree of the Norway Spruce? and yet a great many people are so depraved in their tastes, that they must forsooth try to improve its beauty by ruthlessly shearing it into a ball or some fantastic shape, and thus destroy its beauty forever. One of the prettiest of the spruces for lawn purposes is the Blue Spruce of the Rocky Mountains, the *Picea pungens*. This is considered by some botanists only a variety of the White Spruce. It is well worthy of general cultivation.

*Abies Celica* and *Concolor* are quite hardy. *Picea Nordmaniana* has stood when covered with snow, but I have some doubts of it proving quite hardy when exposed. *Picea pichta*, from Siberia, is hardy and also a very beautiful fir. *Abies Douglasii* shows some signs of distress after a severe winter, but I hope it may stand better after it attains some size. *Pinus cembra* is shewing well; it is very like the White Pine, but more compact in its habit. *Pinus Monspiliensis* is a long-leaved rampant grower, something like *Pinus ponderosa*. I have only grown it one year and cannot say positively whether it will prove hardy or not. It is quite hardy at Rochester and I think will prove so here. *Pinus Mugho* and *pumilio* are low-growing bushes, very suitable for the shrubby border. One of the most interesting of all the Conifere is the *Sciadopitys verticillata* or Umbrella Tree of Japan. The leaves are disposed in umbels and look very much like the skeleton of a Japan parasol. It grows quite well in the vicinity of Boston and stands the climate of Central New York. It will no doubt do well here. Every one who has a nice shady border and well sheltered should try a few *Rhododendrons* and *Azaleas*. The *Rhododendron maximum*, which grows so plentifully in New York State and Northern Pennsylvania, and also in some localities in Ontario, would undoubtedly do well if properly attended to. The *Kalmia latifolia*, a most beautiful native of all the Middle and Eastern States, can no doubt be successfully grown. All that is required with these things is to follow nature and give them a cool, shady situation and well sheltered, such as they enjoy in their native woods.

I have not tested so many deciduous trees as evergreens, but will note a few that are well worthy of trial, and I have no doubt but many of them will do well:—*Magnolia acuminata* and *Magnolia tripetala*, both stand hardy here. The following Japan *Magnolias*, Mr. Hogg thinks, will prove hardy with us, and are certainly well worthy of trial. *Hypoleuca*, a new Japan species, a tree of great beauty, fastigate in form, leaves a foot long, flowers creamy white, and very fragrant. *Kobus*, medium size, flowers bluish white and sweet-scented. *Parbiflora*, a new species and one of the finest of all *Magnolias*. The flower is a perfect gem and very fragrant. *Stellata*, introduced by Dr. Hall, is a small tree with pure white flowers of delicate perfume. If these or any of them prove hardy with us it will amply repay any trouble and expense they may occasion. The new variegated-leaved Japan Maples are also a class that is worth being at some trouble to test. They are all low-growing trees and are very suitable for the shrubbery. I will also note a few more of the new Japan introductions in hopes that some one will give them a trial. I only mention such as I have reason to believe will prove hardy. *Cerasus Japonica rosea pendula*, a new and rare tree, gracefully drooping to the ground, flowers in spring of a beautiful rose colour, a favourite lawn tree. *Cerasus Sieboldii*, *rosea plena*, and *Allia plena*. *Cercidiphyllum Japonicum*, a stately and beautiful tree of pyramidal form, a new introduction of great rarity. *Larix ceptolepis*, Japan Pine; *Malus coronaria Halleana*, fine pink flowers and low-growing; *Planera acuminata*, like an elm, large, smooth, glossy leaves, and very ornamental. *Benthamia Japonica*, *Celastrus Orica*, are choice new shrubs. *Daphne Genkwa*, Japan *Daphne*, one of the rarest and most interesting of shrubs; *Eleagnus Japonica argentea*, silver-leaved Oleaster; *Eleagnus longipes*, vigorous grower with yellow flowers; *Exochorda grandiflora*, a choice vigorous growing shrub with fine white leaves in great profusion.



*Hydrangea paniculata grandiflora* is now well known as one of the very best late-flowering small shrubs we have. *Pterostyrax hispidum*, small tree, handsome foliage, creamy-white flowers in drooping clusters and fragrant.

*Rhodotypus Kerrioides*, a pretty shrub with white flowers; *Viburnum Japonicum latifolium*, introduced by Thos. Hogg from Japan, and one of the best new shrubs; *Abies Alcoquiana*, a choice and curious evergreen; *Abies polita*, tiger-tail spruce, a pretty and curious tree; *Picea Firma*, Japan silver-fir, very hardy; *Picea Japonica*, resembles *Nordmaniana*, rare and hardy; *Pinus Koræensis*, very hardy and ornamental; *Pinus Massoniana*, a large growing tree; *Azalea amoenæ*, a dwarf, bushy evergreen shrub, flowers in May of a purplish red colour and is perfectly hardy; *Salisburia adiantifolia* is not perfectly hardy with me. The young wood does not ripen well in fall and often gets cut off in winter. (Note—It is perfectly hardy at St. Catharines.) I need not extend the list of trees any further, as these, if all gathered into one collection, would be a large and very interesting one. Doubtless some I have named may not prove hardy or may be otherwise unsuitable for our climate, but I have not named anything but what I have reason to believe will be hardy in some part of our country. I feel that I am extending these remarks too long, but I cannot close without a word or two on the prevailing fashion in planting trees. Very few planters ever seem to consider that the trees will grow any after planting. Norway spruces and other large growing trees are often planted in small enclosures or in a lawn a few feet square, or stuck into borders within a foot or two of the margin, and even that is not enough, but they must put in three or four more where one is enough. After they grow up, they form a solid mass and eventually kill one another. On the public streets of our towns and cities it is the same. Three or four trees (often very unsuitable ones) are planted where one would be enough, and by the time they are grown up, if they do grow, they get trimmed up to look like a pole with a tuft of branches on the top. In planting a border, a lawn, or a public park, the planter should look ahead and consider what the effect will be in years to come. Let him realize that one fine specimen of a pine, a beech, a maple, or any other tree, standing out boldly and with its branches sweeping the ground is a far more desirable and beautiful object than a mass of them all crowded together and with no character or individuality to them whatever. After planting as many as are wanted for specimens, the ground can be filled up, if thought necessary, with shrubs which should be removed before they grow up to interfere with the specimen plants. This will prove to be much more satisfactory than the common hap-hazard system of planting.

I would strongly advise all receiving trees from a distance to plant them in nursery beds for a year or two, where they can be nursed until they recover. By doing so there will be far fewer failures than if they are planted out in their permanent places.

I cannot close without once more alluding to the too common practice of disfiguring evergreens by shearing them into all kinds of ridiculous and unnatural figures, no matter whether the habit of the tree is spreading, pendulous, or fastigiate. These despoilers treat them all alike. In a good many cemeteries nearly every tree in them has been thus destroyed by this absurd fashion. If these remarks, hurriedly thrown together, will be the means of leading anyone to experiment with some of the newer ornamental trees and shrubs which have been lately introduced, I will feel amply repaid.

The PRESIDENT.—There is one tree which it rather surprises me to hear Mr. Goldie speak of as hardy—the *Magnolia tripetala*—as I have not been able to grow it at all at London. The other variety, *Aucinata*, is perfectly hardy with us, and one of our most valuable ornamental trees. In referring to the Japanese *Retinosporas* he spoke of one species, the *Filifera*, which, I think, is one of the prettiest and one of the hardiest of all the *Retinosporas*. I agree that the *pisifera* is, perhaps, the hardiest of them all, but that is so much like our *Arbor Vitæ* that it does not strike a person who looks at it casually as much of an improvement on a very common evergreen. The *Podocarpus Japonicus* I have had growing for several years, and it is a very pretty evergreen now. It has not made much growth, but as far as I can see it promises to be tolerably hardy. I would not speak too positively of it, as one winter it was nipped a little at the top. The Blue Spruce, from Colorado, appears to be very hardy, and while botanists may think it a variety of our White Spruce, yet when it gets age the difference is very striking. The

Nordmann's Fir, I thought at one time, was hardy, and then there came a very severe winter that cut it down to the snow line. The *Azalea amœna* is a very beautiful shrub indeed; it is covered with red flowers in the spring, and is most attractive. If any of you have occasion to go to Fairmount Park, in Philadelphia, in the spring, you will be struck with it. It stands the climate admirably there, but it is no use in our district; it kills down every year. The *Daphne Jenkwa* is a very pretty shrub, but I have only tried it once. I left it out during the winter, and in spring it was dead. Those Japanese plants are very expensive. There is another *Daphne* that I think is very much prettier than the Japanese one; that is the *Daphne cneorum*. It is a European one, and has proved hardy with me. It should have a place in every garden, but it is very little known. The *Pinus Cembra* has been referred to, the Swiss Mountain Pine—it is a valuable addition to our list of Conifera, and it appears to be perfectly hardy wherever I have seen it in Ontario.

MR. BUCKE.—I would like to ask Mr. Goldie if the *Wellingtonia* succeeds.

MR. BEADLE.—The only garden I know in which they are growing is Elwanger & Barry's. They had difficulty in getting them to grow until the roots had got away down below the frost line, but now they live.

MR. WOODWARD.—I was a little surprised to hear Mr. Goldie say that *Rhododendrons* grew extensively in New York. I only know of them in Elwanger & Barry's; it is hard to get soil to grow them in, and Elwanger & Barry imported the soil for them from New Jersey. They grow extensively in New Jersey, and perhaps in New York along the New Jersey line where the soil is similar. I think a fine plantation of *Rhododendrons* is one of the most beautiful sights you can imagine in the way of ornamental plants, but I cannot grow them. They will stand the winter, but they will droop down and die. Elwanger & Barry tell me it is the soil.

THE PRESIDENT.—Henry Ward Beecher is an extensive grower of *Rhododendrons*. He says it is all in the soil; that they abhor lime, but that you can grow them in black, mucky soil you get from the bush.

MR. WOODWARD.—A gentleman of my acquaintance applied some lime to his strawberries, and some *Rhododendrons* that he had growing near them were killed by it.

MR. GOLDIE.—Anybody going down the Erie railroad, through Pennsylvania, will see acres of them growing there. If you dig out in the winter black alluvial soil and make your bed deep enough there is no trouble in growing them; but you must put them in a shaded position. Give them a northern aspect, and keep them shaded from the glare of the sun; give them rather a moist situation.

MR. BUCKE.—There is a tree now being introduced from Manitoba, the *aceroides Negundo*, a rapid grower, which I think would be a good tree to plant along the roads.

THE PRESIDENT.—It is such a small tree it is hardly adapted for a roadside tree.

MR. BUCKE.—I have seen them thirty feet high.

THE PRESIDENT.—It is very rarely you see them that high. The wood is brittle, the branches are easily broken, and I do not think they would compare favourably with our ordinary Maples. There are two varieties of the *Negundo* in cultivation, one of which has the leaves almost convex and the other concave. The convex is the northern form, and the other is the southern form. While the tree of the northern form will stand the climate away up in Manitoba, the other will winter kill in our neighbourhood.

MR. WOODWARD.—I must say a word for roadside planting, and for trees in the lane also. I must say a word or two for my two favourites, the Birch and the Hornbeam. I have seen some of them very beautiful, the Hornbeam especially. The Oakleaf Birch, too, is a perfect beauty.

MR. AIKENS.—Some of the old inhabitants of Woodstock have been very industrious in planting trees in the streets, and they have been very successful with them in some cases; but to my mind they have committed a very great error. One of our streets is a beautiful one, is one hundred feet wide, and some of the gentlemen have taken a great interest in that street and planted four rows of trees on it. Unfortunately in the first planting, which was just outside the sidewalk, the trees were put so near that now they are actually killing one another. The branches are intermingling, and they are not trimmed. There is also a row of trees planted, just inside of the gardens, and they have



now come together. I have been proposing to some of the council to thin these out, but when I do that I am looked on as almost a heathen.

Mr. GOLDIE.—The common way of planting trees is for everyone to plant just to suit his own ideas. One will plant them six feet apart, and another one eight or ten. Very few ever plant them more than twelve feet apart on the public streets, and then they are very unsuitable trees often. I hold that trees on public streets should not be planted nearer than twenty to thirty feet apart. In the city of Utica, New York, the trees are so close that the houses are shaded so much that they are damp and unhealthy. On the main streets they are not more than six or eight feet apart. They have to be trimmed up to allow light to get into the houses, and that kills the trees. The larger limbs have to be taken off. In the Capitol ground in Albany the trees have been planted, perhaps, thirty years, and they are so thick you cannot drive a waggon through. The consequence is that for thirty feet up the limbs have died off. The Sugar Maple is about the only tree that is planted here; but there are a number of trees that I think are even more suitable than the maple. The elm, where it thrives, is, I think, one of the finest of trees. It spreads, and allows a greater amount of wind and sunshine to pass through it, and it makes a beautiful tree. Unfortunately, it is more liable to the attacks of insects than almost any other tree that is planted. Then our native Basswood makes a very nice tree. I like to see an avenue with a row of trees on each side, all of one kind. In the city I come from, the city of Guelph, the council a few years ago voted quite a sum of money for planting one of the main streets, but like a great many other councils they knew but very little of what they were doing. There were two rows of trees planted on each side of the street. They should have ploughed the ground up and levelled it and made a nice surface, as the ground was very rough, up and down every way; but instead of that they planted the trees on the ground just as it was. There were hundreds of dollars worth of trees planted on that avenue, and to-day there are not a dozen of them that are worth anything.

Mr. AIKENS.—I agree with Mr. Goldie that for certain distances the trees should be of one kind. I think our native Rock Elm is one of the most beautiful trees we could have. I think twenty or thirty feet apart is too near to plant trees in the streets. I think they should be forty feet apart.

Mr. WOODWARD.—The trouble in our cities in western New York is that the land is so valuable and we make our streets so narrow that we do not give the trees room to grow. I have a beautiful Elm near my house which I would not cut down for anything; but it is planted so near the sidewalk we have to keep cutting it away to give it room.

Mr. PARKER.—When Mr. Goldie speaks of councils not knowing what they are about I suppose he is speaking of Guelph and not of Woodstock. If he lived in Woodstock and was acquainted with our avenues and trees, and with the way we have set our trees out, he would find that they were the pride of the town. We passed a by-law some years ago to encourage the planting of trees, and the result is that there is hardly a residence street in the town that has not rows of beautiful shade trees in it. I think Woodstock has set an example to Guelph and to every other city. Our principal street, Van Sittart avenue, is 122 feet wide, and there are four rows of trees on it, Maples, Basswood, and Lindens, giving us an avenue of trees a mile long. The trees were set out twenty years ago, and now they are getting to be a little too close together. They were set out a little too close, about twenty feet apart; but the people now think it better to trim them up than to thin them out. I think there is no more beautiful tree than our Canadian Maple for a shade tree. In American cities I have been delighted to see the fine avenues of Elm trees, but the limbs spread out so far that they reach the eaves of the houses and fill the eavetroughs with leaves, and are in that way becoming a nuisance.

#### QUESTION BOX.

The afternoon session was opened with the answering of questions from the Question Box, as follows:

QUESTION.—Is there any means by which the ravages of the root or ground Aphid can be checked?

Mr. BEADLE.—I have seen the Aphid upon the roots of Apple Trees, not seriously



enough, though, in our section, to make any trouble; but I understand there are some parts of the country where they attack various plants. I heard a gentleman saying they destroyed his geraniums in his flower garden by preying on the roots. I have no experience myself; but I know that there are some things being used in France with the hope of checking the ravages of that terrible insect which preys upon the roots of their grapevines. I suppose a teaspoonful of bisulphide of carbon poured into a hole in the ground would accomplish the desired result.

The PRESIDENT.—Bisulphide of carbon has its drawbacks. In the first place it has an abominable smell, in the next place it is explosive if it is brought near a light, and then it is too expensive to employ freely in ridding ourselves of these insect pests. The vapour is heavy and poisonous. The mode of applying it is to make a hole in the soil with a suitable instrument deep enough to be below the roots, pour a tablespoonful of this substance into the hole, and cover it up. The liquid being volatile it permeates the soil and kills the insects. I am under the impression that the root louse on these plants may turn out to be a distinct species, and that those attacking the clover may be different from those attacking the geranium. There has been during the past year a great deal of injury done in the fields of clover and grass in western New York and along the frontier by the chinchbug. It is a very small insect, and it might be mistaken for a root louse. The root louse is a very difficult thing to get rid of; but the plan suggested, and the one that seems the most practicable, is to mulch the ground in the autumn. This will induce the insects to come up, and in the spring the mulch should be scraped away from around the trees and a plentiful application of hot water made.

Mr. BEADLE.—What will bisulphide of carbon cost a pound?

The PRESIDENT.—Wholesale about twenty-five cents a pound. I suppose there would be about twenty tablespoonfuls in a pound. In France, I think it can be got at from about fifteen to eighteen cents a pound. There they recommend putting from one to two ounces in the hole when using it for the Phylloxera.

Mr. BEADLE.—My impression is that if you put about half a teaspoonful in a hole in connection with geraniums it would rid them of the insect.

Mr. BUCKE.—How far apart are the holes made in the ground in France?

The PRESIDENT.—I think four feet apart. In almost all the large seed stores in the United States they fumigate their peas now with bisulphide of carbon; they find that is a perfect remedy for the pea bug; it kills them all.

QUESTION.—What is the best mode of planting and growing asparagus to secure the greatest quantity of good size from a given quantity of land?

Mr. DEMPSEY.—I have had very little experience in the culture of asparagus. But the majority of people are apt to plant asparagus too close and to be afraid that they are going to make the land too rich. You cannot make it too rich. I fancy that is the main point to be looked to.

Mr. ANDERSON.—Some eighteen years ago I was working a farm in the country about four or five miles from here, and I turned my attention to market gardening and supplied this market. My first object was to get early vegetables, and among them early asparagus. I planted out a bed about twenty rods long, first ploughing it as deep as I possibly could and manuring it thoroughly at the bottom. I set the rows about three feet apart and the plants about a foot apart in the row and manured it heavily. The first year there grew nothing from it, and the second year nothing but for home use. After that I gave it a good coating of manure both spring and fall, and put on salt or strong brine to keep the weeds down. At that time I could not find customers to take all my asparagus. Now I cannot supply the demand.

Mr. GRAHAM.—I have had about fifteen or sixteen years' experience with asparagus. I have an acre and a half of it. In choosing a sight for asparagus I take one facing the south. If of a sandy nature, so much the better. I subsoil it to the depth of eighteen inches if possible. In subsoiling I put on a good heavy coat of well-decomposed manure. Then after I get my ploughing done I give it another coat on the surface and drag it thoroughly. I then mark out my rows two or three feet apart; take a plough and turn a furrow seven or eight inches deep, and put the roots in there. I place them about eighteen inches apart in the row, and put them down to a good depth so that the crown

of the plants when set will be from three to four inches below the general surface of the soil. In that way you can drag over the plants in the fall without injuring them. Another advantage is that in cutting it in the spring you are not liable to injure the crown with the knife. After the asparagus comes up, and we have been cutting it two or three weeks, I take a scuffle plough and run through and throw a light furrow up on each side. Then I make an application of salt, about ten barrels to the acre. In that way I find it does remarkably well. I cut my brush off in the fall of the year and burn it. Then in the spring I put on a good coating of manure and harrow it in. I would not put the rows nearer than three feet apart. The roots expand on each side, and the bed will widen up to twelve or sixteen inches in width. On the outside the asparagus is rather better on account of the roots being young. I have a bed that has been in use now for the last seventeen years, and I believe it is as good to-day as it was within two or three years after the plants were put out. We have two varieties of asparagus, the common variety and Conover's colossal; but my experience is that you get the colossal by good thorough cultivation.

QUESTION.—Which is the most profitable to raise for market, strawberries, red raspberries or blackcaps?

Mr. A. M. SMITH.—That would depend largely upon your markets, your nearness to market. In some localities strawberries would pay best, and in some localities where you did not have to ship them far, red raspberries, I think, would pay the best. With me the red raspberry has paid better than either of the others.

Mr. SCOTT.—I think they are all profitable if taken care of.

QUESTION.—Do you consider gooseberries a profitable crop to raise for market; if so, which variety would you plant the most of, Downing, Houghton, or Smith's improved.

Mr. BUCKE.—I have not had much experience with the different varieties. I had a great many Houghton's at one time, and I consider that if I could sell them at 15 cents a quart, as I once did, I could realize about a thousand dollars an acre from them. It is one of the most prolific berries that I know of; but the bushes run out in time, and you have to renew them.

Mr. DEMPSEY.—At the present time we find a great deal more profit in growing the Downing than we do in growing either of the other two. The Downing does not produce quite as much fruit as the others do, but it commands nearly double the price in the Montreal market.

QUESTION.—Is the early Canada strawberry a profitable berry for market? How much earlier is it than the Wilson? What is the price of plants?

Mr. A. M. SMITH.—The early Canada strawberry some seasons with me has been very profitable. Other seasons it has been a partial failure. In dry seasons, on dry ground, it has succeeded better in our locality than the Wilson, and it is about one week earlier. The only trouble with it is that some seasons it blossoms so early that the spring frosts affect the blossoms. The plants can be got at ten dollars a thousand.

QUESTION.—What is the experience of New York without fences?

Mr. WOODWARD.—Several years ago our Legislature passed a law absolving every man from the necessity of keeping up any fences if he would look after his own stock, and the result is that to-day we have no stock whatever running in the roads in any part of our State. The only objection to not having road fences is when we are driving stock; but we would all rather turn out and help any person to drive his stock past our places than go back to fences. Without the fences the snow does not drift. I notice one place where a regular grape trellis has taken the place of the fence. I do not think, if you were to put the question to the vote in our State whether we would have road fences again, that you would get one in a township to vote for it. The system of having no fences is universally admired. We mow the roadsides, and there is no stock whatever in the roads. I have no fence on my farm except that a piece of new ground is fenced, and it looks much better to see the crops growing close down to the roadside than it does to see a tumble-down snake fence and the road growing in weeds and grass.

Mr. MORTON.—People in this country, farmers especially, start with the impression that our law provides that a fence shall be built; but if I am a farmer I am not obliged to build a fence on the road. That has been decided in a case of *Spear vs. O'Neill*, I



think is the name of the case. It is the law, of course, that a person must maintain his line fences.

QUESTION.—Will some one be kind enough to describe the form and habits of the insect that is the parent of the cabbage maggot, a small worm with a black head? The green caterpillar or cut-worm is not meant.

MR. BEADLE.—I suppose it is the *anthomyia* that is meant. If so, in the next number of *The Horticulturist* there will be a picture of that very insect.

QUESTION.—What is the cause of the pear blight, and how can it be prevented?

MR. BEADLE.—I think we will put that off till next year.

QUESTION.—What effect will it have on trees or shrubs planted near Black Walnut trees; would it be injurious to them? Is there any poisonous matter from the leaves of the Walnut which would have any effect on other trees?

MR. WOODWARD.—The Black Walnut is one of the grossest of feeders, and I do not know of any tree that can be planted next to it that can compete with it in feeding. Besides that, I do not know that it has any injurious effect.

QUESTION.—What is the best means of attaching labels to plates at fruit exhibitions?

MR. GARFIELD.—In Michigan we have had that thing under advisement for some years. We succeeded in getting a style of plate that pleases us very much, a tin-plate japanned. We can transport four or five thousand of them in small space. But when we got a label on the plate at a state fair somebody who wanted to see exactly what was on that label would reach over, take it off, and then set it back on another plate. We then doubled up some wire and fixed it so it would slip right over the edge of the plate, and then there was a twist at the top of it that we could stick a card in. The twist on the bottom to slip on the plate was not like the twist on the top, so that in the majority of cases people got it wrong side up, and then when the labels were put in they were in all shapes. We were sick of it in one year. For three or four years we were trying to get over that, so at our last exhibition I had a wire so arranged that there is a circle with a standard going right up in the centre of that circle. That circle may be a couple of inches across, and it lies on the plate. You put the apples right on the circle, and the labels stick right up in the centre, and the apples that are on the edge of that circle keep it firm. You can have an entry card and the name of the fruit both on the upright part of this. An important point in connection with this article is that you cannot jerk the label away without pulling the apples off the plate. Another advantage is that there is no doubt to which plate the label belongs, as the label is right in the centre. It was estimated these could be made for a cent apiece when made by the thousand.

MR. WRIGHT.—I am afraid this thing is not going to work, for this reason: We arrange our plates at the exhibition five rows deep, and the result is that the tickets at the back are hidden from sight. The Montreal Horticultural Society has about five thousand little tin clips for sticking on the plates, with a thing standing up in the centre to place a label in; and the Renfrew Society also has some of them.

MR. GARFIELD.—The back labels would not be hidden if the fruit was exhibited on low tables.

### THE BLACK KNOT.

The next topic for discussion was then taken up, viz., "The Black Knot; its cause, prevention and remedy."

THE PRESIDENT.—The Black Knot is caused by a species of fungus, the spores of which are disseminated through the air. I do not know of any way in which you can prevent them being disseminated and attacking your Plum trees in favourable seasons and forming this black knot. The best way to cure this disease is to cut the knot off and throw it in the fire.

MR. WOODWARD.—When you see the black knot attack the body of the Plum tree, cut it all out with your knife as far as you think it extends, and apply the ordinary spirits of turpentine without putting it on the balance of the tree, and I warrant it will kill it every time.



## NEW FRUITS.

The Secretary read the Report of the Committee on new fruits as follows :—

In presenting our report upon new fruits, we recognize the difficulty we labour under in examining and reporting upon the various varieties coming before us, on account of the peculiarity of the fruit season of 1883. It is well known that quality has been lacking pretty generally in all fruits the past season, and hence we consider a test of quality scarcely fair when compared with ordinary years. There are many new varieties of Russian and other fruits, that we are glad to see being introduced into our country, which our committee will have the pleasure of reporting upon in future years.

## STRAWBERRIES.

*Manchester*.—This seems so far, quite satisfactory, being a good strong grower, productive on even sandy soils; fruit large, well formed; colour bright scarlet. No doubt, on further trial this will prove a very valuable variety and a great acquisition; flowers pistillate.

*Primo*.—A fair grower, ordinarily productive; it appears to be a fair amateur berry, but not an acquisition.

*James Vick*.—One of the latest novelties introduced; plant vigorous, productive; berries a good bright colour; flavour fair; plant perfect flowering.

*Bidwell*.—Has done fairly wherever heard from. Plants strong grower, forming large stools, fruit large; colour dark crimson. Not a good shipper.

*Longfellow*.—Plant a good grower if on good strong soil, and well cultivated; berry enormously large, of a bright crimson colour, moderately firm. Will ship very well. A good amateur berry.

*Big Bob*.—Generally condemned.

*Arnold's Pride*.—Raised by the late Mr. Arnold, of Paris. This variety seems to be growing in favour every year. Plant one of the most healthy and reliable we have. Berries very large, of a bright crimson colour, moderately firm, stands shipping fairly, flavour fair. Very productive; one of the best we have for a near market.

*Early Canada*.—Does not succeed east. A few berries will ripen early, or turn red early, but are not ripe until they become a dark dull purple; they are not attractive in the basket, and after the first or second picking they become very small.

*Daniel Boone*.—Is the next new strawberry over which there is likely to be some excitement. Originated by A. D. Webb of Kentucky. The plant is vigorous and healthy, with indications of great productiveness, being large, roundish or oval, light colour and of good flavour. Pistillate.

*Mrs. Garfield*.—Originated by same party, lacks vigor in growth of plant, and on this account can not be recommended.

## RASPBERRIES.

*Hansell*.—Is in all sections where heard from very early; a good grower and productive. Plant quite hardy; berry medium, bright red in colour; flavour very good, resembles our wild berries; its chief merit is its earliness. Requires good cultivation.

*Shaffer's Colossal*.—Valuable for canning purposes. Plant is an enormous grower, apparently hardy; productive; fruit very large, soft, and difficult to handle; colour dull red and not attractive in the basket; flavour fair. Produces a light crop, but ripens scattering on the stems; it cannot be pulled off in handfuls like Mammoth Cluster. It is no doubt one of the best amateur berries.

*Lost Ruby*.—Has not given the satisfaction that was at first anticipated. Perhaps we have not complied with all its requirements in soil, culture or neighbouring varieties; fruit is large, flavour good.

*Reliance*.—Its only fault seems to be too dark in colour, and a little too soft.

*Cuthbert*.—Is growing more and more in favour with fruit growers generally. It is a good grower, so far hardy, and productive. It does not seem to be so particular about

soils as some other varieties, succeeding on nearly all soils that are sufficiently dry to mature the plants before winter. Fruit large, well formed, not quite bright enough, but always attracts the eye of the buyer; berry firm, stands shipping the best of any red raspberry we have tried, flavour good.

#### BLACKBERRIES.

The following new varieties of blackberries are being introduced, but as they have not been fruited or grown to any extent we are unable to report specifically as to points of excellence or otherwise :—

*Early Harvest* and *Stone's Hardy*.—As far as seen the fruit of these two varieties, is small.

*Wilson, Jr.*—A seedling of Early Wilson. Likely to partake of the tender character of the parent.

*Stayman's Early*—Has the peculiarity of rooting from the tip.

*Cayner*.—A seedling 'originated in the Township of Thorold, County of Welland. Fruit large. Has only fruited locally as yet, but has proved hardy and productive.

#### GOOSEBERRIES.

Seedling gooseberry from J. H. Williams, of Goderich. It strongly resembles the Whitesmith, about the size of Smith's Improved. Smooth and free from mildew. A strong upright grower, and heavy bearer; quality equal to the Smith's Improved.

P. C. Dempsey has some seedling gooseberries that are grown from seed of Houghton Seedling, Smith's Improved and Downing, all fertilized with English varieties. All of the Houghton Seedlings are good growers, and produce fruit of a reddish colour, some darker than others; all are larger than the Houghton and a decided improvement. Where Smith's Improved was used for the female the fruit is universally green in colour, the most of them are fully twice as large as that variety; none are inferior to the parent in size or quality. Some of them are spreading, some upright in growth, all productive. Seedlings from Downing are green or yellow. Some are even larger than Whitesmith; most of them are upright in growth, but not nearly as productive as the two former families. All, so far, have been perfectly free from mildew.

*Large Golden Prolific*.—A native seedling. Large, bell shaped, very productive, free from mildew. As yet it has only been grown locally at Fonthill. In growth it is similar to Downing.

*Triumph*—Originated near Philadelphia. Grown at Fonthill, where it is hardy and a good grower, has not yet fruited there.

#### GRAPES.

*Brighton*—Continues to do well wherever tested. It proves hardy, a good grower, productive, and a reliable early grape for the amateur or market.

*Jessica*—Is among those that came to full maturity the past season. It has proved a vigorous grower with Mr. Allan, of Goderich, and some others. A delicious grape, but rather small to be of high market value among white competitors.

*Worden*—Still continues to win its way among the fruit growers. It appears to succeed over nearly the whole length of the Province. Vine hardy, bunch and berry large, colour black, ripens early. It ripened its fruit in many sections of the Province last fall. If left to get over-ripe it will drop from the bunch.

*Moore's Early*—Is among the very earliest varieties. Vine grows moderately; hardy and productive. Bunch medium; berry large, flavour fair but soon fails. When very ripe it drops from the bunch. Not a favourite for market or amateur.

*Lady*—Is a fair grower and hardy vine; only moderately productive. Bunch small, berry large, colour green, ripens before the Concord.

*Telegraph*—Was among the grapes that ripened its fruit last fall. Vine a good grower, hardy and productive. Bunch and berry above medium in size, very close set in the bunch, so much so as to almost crowd each other off.

*Virgennes*.—A first-class grower, with good strong healthy foliage, which may be called leathery. Resists mildew well. Vine productive and hardy. Bunch and berry medium; colour an amber red; flesh meaty; flavour good. Ripened this year with Hartford, and may be kept nearly all winter. This, we think, is one of the coming grapes for any northern climate for amateur or market.

*Niagara*.—Still seems to stand at the head of the list of white grapes in the locality where originated, with the greatest number of good points. The vine appears to be hardy, is a very strong grower, with foliage that seems to resist mildew perfectly, and that adheres to the vine until killed by frost, a very valuable point, as the fruit cannot mature without it. Fruit large in bunch and berry. Pulp, melting and juicy, flavour good and sweet. Ripens with the Concord. It has not been ripened in this Province, so far as heard from.

We beg to remark generally that the past season being a peculiarly bad one for grape growing, we find it difficult to report, with any degree of accuracy, upon a large majority of varieties being introduced, especially upon the late ripening varieties, none of which reached maturity.

#### PLUMS.

*Dougall's Best*.—From the grounds of James Dougall, of Windsor. Mr. Dougall has fruited it for about ten years, the tree is a fairly strong grower, and bears annually great crops. It ripens a few days before White Magnum Bonum. The fruit, which is fully larger than Coe's Golden Drop, is oblong, with a distinct suture; adheres slightly to the stone till fully ripe; colour, a little darker yellow than White Magnum Bonum, and just as it begins to ripen, assumes a beautiful carmine cheek, which places it for beauty in the front rank among plums. Flavour, judged by the standard of Downing, is very good to best. I have seen nothing that would equal it for attractiveness for market in the plum family, and when I add to this fact of flavour being most delicious, it may safely be recorded as a great acquisition to orchardists.

Seedling plum, from Mr. John Arris, of Belleville, has recently attracted not a small amount of attention among fruit growers for market in that vicinity. Tree, a good spreading grower; foliage of bright green colour, holds on well to the end of the season; a very valuable point. It bears an immense crop every year; the limbs this year were just bending under the weight of fruit. The fruit is above medium in size, form longish oval, with a distinct suture, stem one half an inch long; colour, bright yellow, with a slight blush where exposed to the sun. Flesh melting, sweet and good; free stone; flesh yellow. This plum, on account of its hardness, productive habit, good growth, and freedom from black knot, will stand in the front rank as one of the best market plums. It is one of the first to ripen, being several days earlier than Green Gage. On account of its many excellent points we beg to recommend that it be named "*Saunders*."

#### SEEDLING PEACH,

from Thomas Halloway, Clinton, Ont. The tree is from a pit got from England from the garden of the Earl of Fortescue; it is seven years old, and has proved perfectly hardy, and a good bearer. The fruit is large, slightly cling, flesh yellowish, melting and rich; ripens the end of July.

#### KIEFFER PEAR.

Perhaps no fruit of recent introduction has had such a diversity of opinion with reference to its merits as this. The conclusion to be drawn from the discussions and reports on it are, that while the quality is not good enough for a dessert fruit the peculiarity of its flavour makes it surpass anything in the pear line for canning purposes, and being one of the best growers, hardy and productive, it can be recommended for general planting.

Seedling pear, grown by Mr. Ritson, of Ontario County. The original tree is about sixty years old, and this is a seedling from that old tree. It has never shown any blight. Fruit is of medium size, pyramidal shaped; colour golden yellow, nearly covered with cinnamon russet; flesh yellow, buttery, with a peculiar aromatic flavour; season December.



## APPLES.

*Salome*.—Is attracting some attention in the Western States, and is one of three reported by the Mississippi Valley Horticultural Society as being the best for the West and North-West. It is said to be hardy, good quality, uniform size, a long keeper, and retains its flavour late. It has not been tested here yet, but will soon be introduced, when we will be glad to report upon points of merit or otherwise in the various sections of our province.

*Belle de Boskoop*.—Of North German origin, is said to be at home in all countries, soils and climates from Russia to the North-Western States, and recommended by the leading horticulturists of the different countries. Prof. Budd, of Iowa, speaks of it as being preferable to the Ben Davis, as it is of better quality, hardier and longer lived than that variety. The Mississippi Horticultural Society also classes it as one of the three best. As it has not been grown in this country, we are unable to report upon it on point of merit.

All of which we respectfully submit.

P. C. DEMPSEY,  
Chairman.

Mr. WELD.—I was in conversation the other day with a gentleman who appeared very well posted in fruits; and he was speaking most highly of the Garfield strawberry. I do not know that it has been much introduced into Ontario yet. I notice that in the report it is not so highly spoken of as some other varieties.

Mr. HILBORN.—It has not been grown in this country yet to any extent. I think there are only one or two places where it has been tried, and it has not proved to be a good grower, I believe, except on very strong soils. We only tried it last spring for the first. We put it on new, strong, sandy soil, and it seemed to make very poor growth. There are very few new varieties that have done so poorly as far as making plants is concerned.

## INSECT PESTS.

Mr. STARK, Woodstock, handed in the following recipe as a remedy for insect pests: Staves-acre seed powdered, five drachms; hellebore, half an ounce; quassia chips, three and a half ounces; water, seven pints; glycerine, one ounce; boil down to five pints, strain and use with a syringe.

The PRESIDENT.—I would like to ask Mr. Stark whether this insecticide is useful against the aphid or green fly.

Mr. STARK.—I have had no experience with the recipe; but in the course of reading I found that the staves-acre was very destructive to insect life. It is very destructive to insect life on animals, so I thought the combination of staves-acre, hellebore and quassia would be most effective. I have added the glycerine to make it more adhesive.

The PRESIDENT.—The staves-acre seed is very poisonous. It has been long known as destructive to insect life on animals. The various parasites that affect animals have been treated with a decoction of this seed with very great effect.

## ORNITHOLOGY.

The Secretary read the Report of the Committee on Ornithology, as follows:—

*To the Fruit-Growers' Association of Ontario:*

GENTLEMEN,—Your Committee on Ornithology beg to report that during the past year they have paid considerable attention to the study of the food of birds, particularly to that of the English sparrow and a few others whose claim to our good-will is supposed to be very small. Concerning the sparrow, no member of the Committee has been able to give a favourable report even on one count, in every instance the harm more than counterbalancing the good. From Belleville the report is that although a few insects have been eaten, whole fields of millet have been cleared, and out of a number of stomachs examined no one contained any insect food.

From the western part of the Province the report is even worse. In a very large number of stomachs examined, the great majority contained simply road-picking, and in the minority the highest quantity of insects found in any case was twenty-five per cent., and generally only about ten per cent. The cause of the large number of insects in the one instance was that close to the nests there was such a large piece of garden turned up that two hermit thrushes, of all thrushes the greatest lovers of seclusion, were attracted to it and remained several days, proving that a very large number of insects had been exposed. A large number of the stomachs of young birds taken from the nest were also examined, and in these, as with the old birds, most had simply road pickings while a few ran up as high as fifty per cent. of insect food, though generally far less.

On the whole, the quantity of insects destroyed by this bird has been found to be much less than many of its advocates would lead us to suppose.

On the other hand, the damage done by the little pest has been great; and first in importance is the driving away of our native birds.

On three adjoining houses in London there were breeding, five years ago, robins, blue-birds, wrens and swallows—now, the swallows alone are left, the little foreigner having taken possession of all the other nesting places and excluding the rightful owners. Now, the amount of good done by a single pair of bluebirds in a year would far exceed that of half-a-dozen pairs of sparrows, as the bluebirds eat *nothing* but insects, and neither do wrens, the latter in particular taking their food from all the little nooks where insects reside.

It must not be supposed that these three houses are an isolated instance; all over the city the same thing has been noticed, and the scarcity of our native birds has become suddenly conspicuous within four years. As an instance of the damage to fruit trees, may be mentioned the case of a Flemish beauty pear tree which was completely stripped of blossom by the sparrows, even before the blossoms were fully expanded, so that in that year (1882) not a single pear was grown on that tree.

In view of the large amount of damage done by the intruder, your Committee would earnestly recommend that measures be taken immediately, if not for its extermination, at least for its partial destruction; the more severe step of extermination having been already commenced in several states of the adjoining union, where the bird is much better known than here. With regard to the other birds under question, the robin, cat-bird, red-headed woodpecker, and cherry-bird, your Committee are of opinion that the measures of destruction when necessary, now in force, are sufficient for the present.

The case of the pine grosbeak, who came down from the north last winter and did some serious damage, was not considered important as it is so seldom that this bird visits us that it is impossible for it to do us any lasting injury.

W. E. SAUNDERS,  
Chairman.

The PRESIDENT.—There is one point in this paper which has just been read to which I desire to call special attention, and that is in regard to the investigations as to the food of the young of these birds. We had all supposed until this past year that the young of nearly all small birds, but especially the sparrows, were fed almost exclusively on insect food. But the investigations recorded here show that the bulk of the food of the young sparrow is made up of soft road pickings, and those views we have heretofore held with regard to the value of the sparrow during the nesting season need to be modified.

Mr. GOLDIE.—I do not know how it is that in other places the sparrow is condemned so much. They must act differently around Guelph from what they do elsewhere. I was the first one that brought them there, and in all my experience I have never seen the first thing that you could say was an injury in the garden that they have done. From early spring till late fall I see them constantly on the lawns around the gardens gathering insects, grasshoppers particularly, and little beetles. I often see a whole flock of them on my lawn picking up these insects. In regard to their driving other birds away, they are a little quarrelsome, but I have counted no less than nine species of birds on my lawn at one time, and probably two or three sparrows among them. I never saw the least in-



inclination to fight on their part except among themselves. I think the robin does far more damage in the garden than ever the sparrow does. In regard to the sparrow taking up the pickings from the roads, I do not see that there is any injury done to the public by that. I think it is rather a benefit than otherwise.

The PRESIDENT.—I would like to ask Mr. Goldie if he has ever examined the contents of the stomachs of the birds he refers to.

Mr. GOLDIE.—I never have. They will pick the seeds of different weeds.

The PRESIDENT.—I have often fancied myself that I saw the birds eating various things, and came afterwards to conclude they had been eating something quite different. Unless we are near enough to see the food going down their throats I do not think our observations are as reliable as those of persons who examine the contents of their stomachs, which was what was done in the investigations on which this report is based.

Dr. CROSS.—About ten years ago Mr. Merritt, of our place, brought the sparrow there. We were all highly pleased to see them; but soon complaints came to be made about them that they drove away the other birds. So far as their driving away the other birds is concerned, that has been a great advantage to me; because five years ago the other birds, the robin particularly, took nearly all my cherries and destroyed large quantities of other fruits. I have had them take one hundred pounds of grapes in one day. Robins were so plentiful I was glad to see them go away. Whether the sparrows drove them away or not I do not know, but I have twice the quantity of fruit now that I had before the sparrows came.

Mr. MITCHELL.—I would endorse what both Mr. Goldie and Dr. Cross have said from my experience. I have found that sparrows, where they are not very numerous, have done no damage to the fruit. The robin, on the other hand, as Mr. Goldie says, is a very destructive bird. I have not dissected the robin, but I have seen him on my berries, and I always found that if I left him long there were not many berries left.

Mr. , Woodstock, President of the Board of Trade.—I live a little out of the town, and I have always remarked that we could not get any sparrows to come out of the town. I think if we observe we will notice that sparrows live mostly in the towns and cities, and that we do not often find them in the country. I do not think they do the same amount of damage in the town that they would in the country.

Mr. AIKENS.—I remember some years ago it was the great cry of New York that the people could hardly live in their houses on account of the caterpillar; but since the sparrows were brought out the caterpillars have vanished.

The PRESIDENT.—If Mr. Aikens will be kind enough to read the last number of the *Canadian Entomologist* he will find that that relief was only temporary in New York. The writer admits that this smooth measuring worm, which formerly devastated the trees on the streets and in the parks of New York, were destroyed by the sparrows, but he says their place was immediately taken by another worm which is a worse pest than the sparrows hunted out. I must plead guilty to being the first person in our part of the country to introduce the sparrow; but I am perfectly satisfied that if we could get rid of them with twice the trouble that we have taken to introduce them we should be doing a good thing for the future of our country. One gentleman remarked that he thought it was a good thing if the sparrows had driven the other birds away. If the sparrow would content itself with driving the robins and cherry birds away, those which are injurious to our fruit, and allow those which feed on nothing but insects to remain, it would be all right; but he does not content himself with that; he drives away the wrens and blue-birds and other insectivorous birds, and only feeds himself occasionally on insects. We know that in Australia the Government have been obliged to take some extraordinary measures on account of the increase of the sparrow there, and a price has been put upon their heads. It was remarked that if the sparrows did not get numerous they would not amount to much in the way of destructiveness. I would like to know how they are going to be prevented from getting numerous. They increase more rapidly than any bird I know of.

Mr. CROIL.—I must say that they increase very much in the country, because I see a great many around our barns. I see the grain on the floor, and that the sparrows go after it.



Mr. WOODWARD.—I believe that sparrows do eat insects sometimes, but as a man in Rochester said last week, they never eat an insect unless they take it away from some other bird.

Mr. GOLDIE.—In regard to the question of sparrows driving other birds away, I notice in going round the country that about farm-houses and farm-yards and places where birds were numerous in former times they are just as scarce now as they are in the towns. I have no doubt that the prevalent custom among boys and others of shooting birds so plentifully as they do is the reason of the scarcity. I am aware that the sparrows will drive the wren, the bluebird and other birds that build in cavities out of their positions in the towns; but around Guelph I have never seen them touch a bud of a tree or a fruit of any kind; and they are there in hundreds—the trees are covered with them. With regard to their eating insects, I have noticed them come into my mill and eat the meal worms. I do not know of any bird that will not eat worms more or less.

The PRESIDENT.—A Flemish Beauty pear tree in my garden was entirely stripped of the blossoms, and I had two or three sparrows knocked down, and upon examining them I found the pear blossoms in their stomachs.

Mr. A. McD. ALLEN.—I have seen them myself picking buds, especially of plum trees, when perfectly gorged with grain or other pickings. They seem to take a perfect delight in picking off and dropping down the buds of plum trees and even black currants. I believe the English sparrow has helped to drive off a great many of our other birds. It does not drive off the cherry bird and the robin. I would willingly be one of a number to move to exterminate the English sparrow altogether.

Mr. MORRIS.—With regard to their eating caterpillars, in our district there were never so many caterpillars as there were this past season all through the forest and fruit trees of all kinds; and these birds also were more numerous than they have ever been.

Mr. BUCKE.—Some years ago we had thousands and thousands of these caterpillars all through the woods about Ottawa, and the next year we had not any at all. And we had not any sparrows in the woods either; so that I do not think we can trace the eating up of all these caterpillars to the sparrows.

The PRESIDENT.—You will find the agricultural press everywhere in the neighbourhood of large cities in the United States where these birds are numerous, teeming with letters from farmers complaining about the sparrows.

Mr. ANDERSON.—I am told that this year they are fewer in Canada than they were last year, owing to the severity of last winter. My experience of sparrows in the Old Country was that they were an unmitigated pest—that there was no redeeming quality about them.

Mr. GARFIELD.—We have a great many more of them in Michigan than we wish to have, and whenever the sparrow question has come up the fruit growers have been unanimous in desiring to get rid of them. No one stands up for them.

## SELECTION.

Mr. BUCKE read a paper entitled, "Selection as a means of Improving Plants and their Products," which was as follows:—

The origin of many of our fruits and vegetable products is enveloped in the mystery of the past, whilst others are still traceable to the source from whence they sprung. There is hardly any of them which culture has not so improved that if they were placed side by side with their ancestors, it would be difficult to recognize the offspring as coming from the parent stock.

The primal parent of wheat has been supposed by many to be the *Egitops orata*, a low-growing grass from six to eight inches high, with a few grains or seeds borne upon its tiny stem. This has been contradicted by some, but it is certain it is not far removed, as the pollen of the one freely fecundates the other. Wheat itself or some grain much resembling it, was cultivated in pre-historic times. The grains of wheat have been found in the hands of the Egyptian mummies which have lain embalmed for at least four or five thousand years.

This grain has been often improved by selecting the best ears when ripe, and from

these—the best grains—they are then sown in suitable soil apart from other wheat, and in this way many varieties have been obtained.

Every one interested in perfecting horticultural products should secure a piece of well tilled ground in which to plant chance desirable-looking seedlings which the wealth of nature is constantly producing in every field or garden. Whether these seedlings are of fruit or vegetable plants, the better qualities are usually shown in early life by the thrifty and healthy appearance of the leaves, and a more vigorous growth.

All annuals are apt to degenerate, or recede to the first parent type, and new varieties have to be obtained from time to time, so that individual cultivators who care to go into the raising of superior plants are pretty sure to be compensated for their trouble.

The apple amongst fruits is receiving its full share of attention, perhaps even more now than ever before. This fruit has evidently, through a course of many years, been developed from the crab. The Medlar, so much prized by some, though much neglected on this continent, has been obtained by the high cultivation of the thorn. Nectarines and peaches have also been produced from very inferior parents, the latter has advanced in two different directions; from the stone we get the almond, and from the covering we get the fleshy fruit. The grape and fig are more common in the warmer climates of Asia, but have been improved and acclimated so that they extend over a large area of Europe, and are destined to play a conspicuous part on this continent.

The foreign varieties of the grape have been crossed with those native to the soil, and a new and valuable strain produced. The strawberry is remarkable for the number of its species, and the rapidity of its development during the past sixty years. If any one will compare the mammoth Sharpless with the wild field variety, he will see at once the advance obtained.

Only three kinds were known in France in 1746, where this fruit was early cultivated.

The gooseberry in England has sprung from only one variety common to central and northern Europe, and the differences now found in them is wholly due to culture and selection. We in this country have the English to work with, and also the two wild natives found on high and low lands. In England, in 1629, only eight varieties of the gooseberry were known, now they are counted by hundreds. The most interesting part of the history of the gooseberry grown in Britain is its steady increase in the size of its fruit, and this peculiarity may be confidently counted upon in this country. The wild English gooseberry weighs 5 dwts. About 1786, one hundred years ago, fruit was exhibited, weighing 10 dwts.; in 1817, 26 dwts.; 1825, 31 dwts.; 1830, 32 dwts.; 1844, 35 dwts.; 1845, 36 dwts.; 1852, 37 dwts. 7 grains, or nearly eight times as much as the wild fruit. The increased weight is due to the selection and planting of seeds from the finest berries, and by assisting the plants obtained with mulches and manures.

Though dealing in this paper with the improvement of plants by selection, it is impossible to put aside the surest though more skilful method of the hybridist.

Plants and animals are both organic bodies and it is from the germs of the fecundating organs that new races are obtained. This knowledge has been largely brought to bear on the improvement of our live stock, and however important it may be in that direction, it is not so much so as in the improvement of the herbage which supports them, and the fruits and plants which are beneficial to man; the progress of the vegetable kingdom is of much more importance to the well-being of the human race, because the vegetable products of a country far exceed that of the animal in quantity and money value. A thousand million men are dependent on agriculture, and nine-tenths of the fixed capital of all civilized nations is embarked in it, whilst two hundred millions expend their daily toil in the prosecution of those duties which obtain food from the soil.

In multiplying and increasing the products of our field and garden plants we not only get heavier crops but the quality of them is generally improved in a much greater ratio.

Some scientists have conceived the idea that when chemistry shall have attained to its ultimate limits, man will have acquired such a dominion over the principle of life that we will be able to dispense with the laboratory of nature, and manufacture products without her aid, so that it will not be necessary to depend on the vegetable or animal kingdom for the necessities or luxuries of life. Having conquered the waves and winds



by the aid of steam, is man to kick the soil under his feet as a useless thing? Are we progressing toward that time when we shall utterly disregard the genial shower, or the distillation of the tiny particles of dew which refresh and invigorate vegetation? Are we to be alike indifferent to rain, cloud, and sunshine; to light and heat, to laugh at the cares of the husbandman and the tillers of the soil? Is the order of nature to be reversed and the habits of the human race to be changed? I say no a thousand times. In taking from man the pursuit of knowledge, by giving him a knowledge of all things, he would be a most miserable being, unless much changed from his present state. It is difficult to understand what could compensate for the calm and tranquil pleasures of a country life, or the innocent enjoyment of the returning seasons, the health and happiness which are the handmaids of labour performed in the free open air, and under the bright sun of heaven. These pleasures would be replaced under the new order of things, by an imprisoned life in manufactories, and the crowding together of individuals in dense and populous cities. Should such a state of things occur in the future, with them as horticulturists we have nothing to do at present. Let us rather work patiently for the benefit of ourselves, and in that for the benefit of the race, making what progress we can in wresting from nature the secrets she hides from us behind her veil, knowing that if we reap no remunerative advantage in the present we shall at all events add our quota to the store of knowledge, and in doing so

“Will leave behind us,  
Footprints on the sands of time.”

The PRESIDENT.—It would hardly be safe to take the weight of the gooseberries which Mr. Bucke speaks of there as indicating the average character of the crop produced. Those who know the devices that horticulturists resort to in England when they wish to raise gooseberries for exhibition will be aware that they remove all the berries but perhaps half a dozen and then look after them as carefully as a mother will a child—place bottles of water under them, etc.

Mr. GARFIELD.—Over in Michigan this matter of selection with the notion of improving plants and seeds has been brought up a good deal the last year in our meetings—and very prominently in discussion with regard to the improvement of wheat—and our people are quite divided on the point as to whether the ordinary selection that we undertake in the improvement of our wheat—by blowing through the fanning mill and selecting the largest seeds—is a selection looking in the direction of improvement. The farmers who have been in the habit of selecting in that way, claim it is the true way; while horticulturists, who are looking for a number of qualities besides size, say it is a wrong way.

Mr. BUCKE.—I do not think a permanent improvement can be effected by selecting seeds in that way. The best way to permanently improve wheat would be to select the plants, or take the best ears, and take some of the largest grains also of the wheat, and plant those. You will then get a true strain.

The PRESIDENT.—I think it is generally admitted, that if in planting potatoes you select every year the smallest potatoes to plant, your crop will consist of very small potatoes before very long. Some years ago I experimented by taking some of the most imperfect raspberries I could find—some with two or three grains on them—and I found in every instance the seedlings were of that character; they did not approach in size towards the perfect form of the fruit. I did not grow a great many—perhaps a dozen or two of the seedlings—and I threw them away as soon as I fruited them.

Mr. AIKENS.—The theory that you advance is commonly accepted, I think, now; but I remember seeing not very long since a short article—perhaps in the *Horticulturist*—to the effect that it is a false method for farmers to take the kernels for seed corn from the centre of the cob—that they should select the seeds at the ends of the cob rather than those in the centre.

Mr. DEMPSEY.—If we take a number of seeds, select a single seed that shows marks of improvement and plant it alone—separate a long distance from other seeds of the same kind—we shall perhaps see in the products of the one seed a vast improvement, while we find that those of another are quite inferior to it. I saw an instance of this last summer where some of the finest kernels of oats had been selected. I saw heads of oats that



measured two feet and a half in length. I saw such heads, that calculating the number of kernels on one head and then estimating the number of kernels produced from a single head of oats there were two thousand of them. In this way it is possible to improve our vegetables and also our fruits. A number of years ago I observed in my pear orchard where a certain pear was growing near another variety, that a branch of this other variety hung over it, and I noticed that the one pear had attained a size nearly one-third greater than any of the rest. We planted the seeds from this pear, but the blight seemed to attack the seedlings and they were all destroyed. That only went to prove that the pollen of another variety actually did affect the fruit slightly that year. Mr. Rowe, from King, has worked considerably in the selection of potatoes and in grafting them. I was never inclined to believe that it would have any more effect to insert the eye of one potato in the eye of another potato or to grow one potato from the starch of another potato than it would have to fertilize it with Guano; but we are in our infancy in the fertilization and improvement of vegetables and fruits.

Mr. WOODWARD.—I verily believe that by proper selection of seeds, propagation of seeds and cross-breeding of seeds we can double any crop we are now growing. I believe that the farmer who gets his land into the highest state of fertility, can by proper selection double his crops. I have written a few articles for the *Tribune* on this very point. I have not got through with them yet. I wrote some on the influence of improved seeds, the necessity of improved seeds, and then I followed them up with experiments on potatoes. The way in which we save our potato seed is as unphilosophical as it can be. We get it from the small potatoes left from the winter, and these potatoes we get from diseased plants. Here are the Beauty of Hebron, the James Vick and the White Elephant, all sports from the same potato obtained by selection and greatly improved one over the other. Now, we can continue that if we will select properly, and we can continue it in other seeds. The method that Mr. Garfield speaks of selecting seeds for wheat by taking the large seeds, is wrong, because very often these will be from ears that produce but a small number of seeds. The proper way is to select from plants that have a large number of seeds and from the best plants. Last year by means of selection I harvested 517 bushels of Barley from seven acres, seventy-three and six-sevenths bushels an acre; while in another field in which the ordinary seed was used the crop was forty-five bushels to the acre. Mr. Carman, the editor of the *Rural New Yorker* is bound to astonish the American people shortly by the way he is crossing and improving seeds. Among the rest he has got a cross between wheat and rye, it may not be worth anything, but it shows the possibility of hybridizing these cereals.

Mr. DEMPSEY.—I have a cross between the apple and the pear that fruited two years in succession; but it has failed to mature its fruit each year, from the fact that the fruit rots on the tree. We have been in the habit of selecting our potatoes for seed for a number of years back, in consequence of which we have not for several years had any difficulty in disposing of all the potatoes we had—all the surplus potatoes, little or big—for seed. People will come for miles to buy our potatoes in the spring for seed, and we tell them every time the way we do it. We go and dig our potatoes in the fall and select from the best hills the best specimens we get, and these we plant the next year. The result is we get as good a price for our little potatoes as for the big ones.

Mr. WOODWARD.—I will tell you in a very few words the proper way to treat potatoes. I know it from experiment. Go and select the model potatoes of the variety that you wish to propagate, plant those in the best ground you have—a small plot—in the best manner you know how, and take the best care of them possible. When those are in the best state of their growth take a lot of sticks with you made of lath—or anything that will mark them; go through that plot and carefully study the characteristics of those hills of potatoes, select those hills which are in every respect just what you would have them, and mark each of those hills with one of your little sticks. Cultivate them till they are ripe, and then select your seed from those hills. If you are digging your potatoes and find any of them are not all you want, do not take any from that hill; but when you come to a hill which suits you, carefully take those and preserve them till the next year. Take the balance of your seed out of the rest of these for your next year's planting. Repeat that year after year and you will breed a pedigree potato, and after

the second year I would rather have the smallest, most inferior potatoes from your general crop than take the seed out of the best potatoes you have now.

Mr. GARFIELD.—It seems to me that Mr. Woodward has struck one of the most important things for us to take hold of as farmers that we can study. It is just the point I made with regard to grain ; our farmers select their corn for planting ; but if you suggest to them that they adopt the same process in regard to selecting grain they will laugh. They can see the point in regard to corn, but they cannot see it in regard to wheat. In regard to potatoes some men will say small potatoes are just as good as large ones to plant, and I say they are right if they get the potatoes from a good hill. It is just a question of hill—whether a man gets a large potato from a hill in which there were very few potatoes, or gets his potato large or small from a hill in which the potatoes are generally good.

Mr. BURNS.—I have increased the crop one-third at least in peas, and I think in oats I have almost increased it one-third, just by taking seed grain from light soil and sowing it on heavy clay.

### CRANBERRIES.

Mr. A. McD. Allan read the following paper on cranberries:—

Up and down throughout the Province there are hundreds of acres of swampy lands that at present are of little or no practical value to the owners, and yet possibly a large area of this swampy land could be utilized for the purpose of cultivating cranberries. This subject stands prominently among our neglected industries in this Province, probably from the fact that so little is known about the various points of cultivation and care necessary in order to secure a crop at once profitable and regular. Consumers heretofore have been satisfied with the supply reaped yearly from wild beds in far northerly sections, or imported from the neighbouring republic. But now that the demand is rapidly increasing, and will certainly continue to increase, those who have pieces of waste land suitable for cranberry culture may feel interested in a few particulars on the subject.

There appears to be several varieties of this fruit in European countries, and in some of these countries the cranberry stands among the most reliable and valuable crops for home market and export. But although it is largely grown throughout Europe, our American cranberry being larger and of a much better quality finds a ready market across the ocean at much higher prices than the native berry. By the British market reports, I find that the demand in that country for the American cranberry has rapidly increased during the past few years, and prices are steadily on the rise, the supply being short of the demand.

The first requisite is to secure a piece of land that can be flooded during the winter season, but it must be so situated that the water can easily be drawn off in spring when wanted. The plot should be sufficiently underdrained or ditched to avoid holding water stagnant near the surface, as this would induce disease and the breeding of insect enemies.

In preparing the soil care should be taken at the outset to have it free from grass and weeds, although I have seen plots along the sea coast in Maine where, in the course of three or four years, the vines made so close a matting that grass was choked. But like other crops, so in this it will pay to begin with clean cultivation. The plot should be nearly level, so that when flooding there will be an even cover over the whole surface. Lands with peat or muck bottoms are usually considered best. If a regular sod is formed, especially of the coarse strong-rooted swamp grass, it should be removed at a season of the year when the water is low, and in place of this sod a complete cover of fine sand about two inches in depth should be spread over the entire plot. Clay bottom soils should be avoided. Peat or decayed vegetable soil, with a mixture of sand, will do, although if at all possible it is preferable to have a complete top cover of pure sand. The winter is a good time to apply the sand, as there is usually more time for such work at that season, and besides, the expense is generally less for hauling then. If there is danger of grass or weed roots in the soil, the sand should be laid four inches deep over the surface, otherwise half that quantity will be sufficient.



It is not necessary to obtain rooted plants for setting out, as the cranberry grows freely from cuttings. Some growers make small cuttings, broadcast them over the plot and roll or press them into the soil, while others advocate planting in rows. If the soil is clean, broadcasting the cuttings is probably best, as the vines cover the surface sooner and thus prevent the growth of grass and weeds. When they are planted in rows there is usually too much space left for cultivation the first two years, and this space allows the scorching sun to beat so directly upon the young vines that they are often weakened. Under favourable circumstances, if plants are placed two or even three feet apart they will completely cover the ground in about two years.

The spring is the best time to set the plants or cuttings.

Usually the plot should be flooded about the first of December, and the water drawn off gradually the following spring from the first to the middle of May. After the plants or cuttings are set the water should be kept near the surface and gradually drawn off as they strike and grow.

If a stream runs through the marsh so much the better, as in dry weather in mid-summer, when there is any appearance of insect enemies, the flood-gates can be closed and the plot thoroughly saturated for a couple of days so as to destroy these enemies, while at the same time supplying needed moisture to the plants.

Sulphate of iron is an excellent top dressing for cranberries but it must be used sparingly. If dissolved in water a liberal sprinkling will be sufficient.

There are several varieties grown, but I think the favourites are the Cherry and the Bugle, although the former is reported as being tender in parts of the State of Maine. As a rule, a full crop need not be expected until the fourth year, although a small crop is often reaped the second year from planting.

The yield varies from one to two hundred bushels per acre. Large growers reap the crop with rakes specially adapted for the purpose, but hand-picking is preferable, as the berries are not injured, and hence keep much better in transit and bring a higher figure in the market.

As soon as the crop is picked and barrelled, it should be sent to market if the grower wants to make the best value out of his crop year after year, as by keeping, the shrinkage will more than counterbalance any possible advantage in awaiting a rise in the market.

## MISTAKES OF FRUIT GROWERS.

Mr. A. M. Smith read the following paper on the above subject :—

Some one has said that mankind learn more from their failures or mistakes than they do from their successes. If this be true, and I have no reason to doubt it, it accounts for the great number of wise men among fruit growers, for no other class of business men make more mistakes than they do, and as fruit growing is becoming one of the great industries of the age, and so many are going into the business, it has occurred to me that I might benefit my fellow workers and advance or accelerate the wisdom and intelligence of the country, by pointing out some of these mistakes for the benefit of those who are just beginning the business, so they can make them at once, and thus more quickly acquire the knowledge which so many of us have been years in obtaining. The list I have to offer is not a complete one by any means and I have no doubt but energetic fruit-growers will discover others equally valuable as promoters of wisdom—and if I continue in the business for a few years more I feel quite confident I shall myself be able to add to it.

For convenience I have classified mistakes as follows.—Mistakes in planting—mistakes in cultivating and pruning—mistakes in marketing—and miscellaneous mistakes.

*Mistakes in Planting.*—It is a mistake to plant trees till you get your ground ready ; or to plant in soil not adapted to their growth ; or that has not been properly enriched and thoroughly underdrained—trees will not thrive with wet feet. It is a mistake to plant in certain quarters of the moon—trees do better planted in the earth.

It is a mistake to plant too many varieties—or to plant all of one variety—or to plant a variety because some tree agent advises you to ; or to plant every variety offered you before it has been thoroughly tested in your locality, unless you have the means to—



conduct an experimental fruit farm. It is a mistake to plant in post-holes and think that trees will grow without any further care or cultivation.—It is a mistake to plant at all unless you know what varieties you want and how to take care of them when planted.

*Mistakes in Cultivation.*—It is a mistake to think that when trees are once planted they will take care of themselves.—It is a mistake to turn young trees out to grass before they are weaned from the nursery.—It is a mistake to think they don't want just as good cultivation as corn or any other crop to succeed well.—It is a mistake to try and raise crops year after year from an orchard without returning anything to the soil: trees want feeding as well as your pigs or cattle to produce growth or fruit. It is a mistake to trim by horse or cattle power, you are apt to overdo the job.—It is a mistake not to trim and shape your trees when young and thus avoid the necessity of removing large branches when the trees are large, and thus mutilate and injure them.—It is a mistake to let too much fruit grow on young trees or vines.—It is a mistake not to thin out heavy crops on any trees.

*Mistakes in Marketing.*—It is a mistake to market your fruits in flour or meal-bags, when you can get clean ones.—It is a mistake that you don't use the clean ones for oats or wheat and put your fruit in good clean baskets or barrels.—It is a mistake to try to put a quart of berries into a pint and a half basket, or a half bushel of peaches or pears into a twelve quart basket—they shrink in getting them out.—It is a mistake to put all the small samples in the bottom of the basket, most people take them out before they use them, besides the large ones on top have a crushing effect, if not upon them, upon your honesty as a fruit-grower.—It is a mistake to send soft fruit to a distant market.—It is a mistake to send fruit to a commission man whose honesty you know nothing about.—It is a mistake to expect prompt returns from every commission man you send to.—It is a mistake to send off fruits to be sold on commission if you can get a fair price near home.

*Miscellaneous Mistakes.*—It is a mistake to think that nurserymen never make mistakes, or that they are not willing to rectify them when they can.—It is a mistake to think they are responsible for the death of all the trees that die before coming to maturity, or for all the tricks of tree agents.—It is a mistake to think they don't want to sell all their surplus stock, and that tree agents don't often buy it and without their knowledge, re-lable it just what their orders call for and send it out, and when it bears, nurserymen get the cursing.—It is a mistake to think all tree agents are rascals.—It was a mistake that you did not clean all the rubbish away from your trees last fall and bank them up with earth to protect them.—And it is the greatest mistake of all if you are not members of the Fruit-Growers Association, and taking the *Canadian Horticulturist* and contributing to its columns, and thus advancing an interest which is helping to make Canada one of the most healthy, beautiful and prosperous countries upon this fair earth.

At this stage the Convention adjourned for dinner.

## QUINCE CULTURE.

The proceedings of the afternoon session were opened by the Secretary reading the following paper on Quince Culture, by Mr. Linus Woolverton, of Grimsby:—

Among the fruit reports from various sections of Ontario there is a remarkable absence of any reference to the Quince. The markets of our principal cities show a very scanty supply of the same fruit, and indeed in some of them it is almost unknown. These facts prove to us that the Quince is very much neglected as a market fruit in Canada.

Why is this? Not because it is a new fruit, for we find it highly commended eighteen hundred years ago, when the pear was held in very low estimation, and so poor in quality that it was scarcely edible unless boiled or baked.

Neither can it be because they are a useless fruit, for physicians say they are useful for alleviating affections of the throat; while as an article of diet the Quince deserves to hold a much more conspicuous place than it now occupies. Though unpalatable when not cooked, they may be served in a variety of ways. In the *Horticulturist*, page 116, we find canned Quinces placed side by side with the peach in importance for family use, and spoken of as an article of diet of which few will ever tire. Quince jelly is unsur-

passed for beauty and richness ; Quince marmalade is highly esteemed ; Quince preserves are most delicious ; roasted Quinces are excellent, and Quinces constitute an excellent flavouring used with pears or apples.

Neither can we attribute the scarcity of Quince trees in Canada to the unsaleability of the fruit, for we find an increasing demand for it at prices quite as remunerative as those received for the pear. Possibly it is too tender for many parts of Ontario, but it is certainly harder than the peach, and the latter is grown in many places in great abundance. Certainly in the Niagara district the Quince thrives well, though plantations of it are seldom met with. We have ourselves several hundred trees in our orchard on the lake shore at Grimsby, and find them not only hardy and thrifty, but bearing good crops almost annually.

The best variety for general use is the Orange, also called the Apple Quince. It is hardy, very productive, and possesses a fine quality, a beautiful golden colour, and an excellent flavour. The Champion Quince contests the first place with the Orange. It originated in Connecticut in 1865, and the fruit is claimed to be larger and to ripen earlier than that of the orange.\* Rae's Seedling, though larger than the Orange, is not so productive. Mr. Downing says the Portugal is the finest in quality and best for baking or marmalade, its flesh turning a fine purple or deep crimson when cooked. J. C. Loudon, in his *Horticulturist*, speaks of the fruit as more juicy and less harsh than that of other varieties, and therefore the Portugal Quince is the most valuable ; but unfortunately for the avarice of Canadian fruit growers, it is so shy a bearer as to be unprofitable. The Pear-shaped Quince ripens later by nearly a fortnight than the Orange, and thus prolongs the season of shipping, but the quality is so much inferior, and the skin so dull in colour; that it cannot be recommended ; besides, the Orange Quince can be gathered in such a way as to sufficiently prolong the season. Last season, 1883, we made the last shipment of Orange Quinces on the 19th October, which is surely late enough to meet the requirements of any grower ; at the same time, they are sufficiently early, for we shipped the first on the 25th September, and were told by our commission agent, "there is no inquiry for Quinces yet."

There are several ornamental varieties of the Quince, and among them the Cydonia Japonica, or "Burning Bush," is quite a favourite about Grimsby. In the *Horticulturist* for 1878, page 53, this variety is recommended for a garden hedge—certainly it is very ornamental in the early summer, with its scarlet flowers in rich profusion appearing before the foliage is developed, and in the autumn with its prettily coloured fruit.

The Quince prefers a damp soil, if drained of standing water, but neglect of this precaution in Canada will result in destruction of the roots in a severe winter. It will thrive, however, on a great variety of soils, the writer having tried it on sandy loam, light sand, clay loam and heavy clay, upon all of which it is more or less successful, though, perhaps, the clay loam, enriched by a black deposit from surface water, has proved most suitable. Some recommend ten feet as the proper distance for planting Quinces, but in good rich soil twelve or fifteen feet apart is not too much.

An article by W. J. Fowler, quoted in the *Horticulturist*, 1882, page 281, gives some good hints about Quince growing. He commends low, mucky soil ; advises a heavy mulch of leaves, with some stable manure, every fall ; also, the application of about a quart of salt annually to each tree to keep the soil cool and moist, and render other fertilizers more available.

I agree with him that cultivation of the soil may be discarded if a mulch is applied, and that this treatment, while it may seem careless, is at the same time most judicious, for the roots are very near to the surface, and are easily mangled by ploughing or spading. I have tried both plans, the oldest Quince orchard on our fruit farm having been planted by my father about twenty-five years ago, at a distance of eight or ten feet apart, cultivation therefore having been soon discontinued from necessity. I have had the grass and weeds cut and piled about the trees, and upon the rubbish scattered both coal and wood ashes. The result has been eminently satisfactory, both with respect to growth and productiveness.

\* NOTE.—It does not ripen as early ; in truth it ripens too late for this climate.—*Editor.*



Quinces may be gathered as they ripen in such a manner as to prolong the season very much. No fruit needs more careful handling—even a thumb mark becomes a dark spot in a short time. For shipping to a distant market in considerable quantities, probably no package is more satisfactory than the ordinary apple barrel. The ends should be lined with white paper, and the fruit placed in very carefully, calyx end downward against the head, instead of the stem end as with the apple. The tail end of the barrel should be gently pressed to its place with a lever or screw press, but less heavily than in the case of the apple, because the texture of the Quince is more brittle and less elastic, consequently every bruise will result in a serious blemish. For a near market, and in smaller quantities, no package can surpass the now very popular twelve quart basket. Whichever package is used it will usually be found best to make two classes, and not to ship the small mis-shapen, or poorly coloured specimens in the same package with the choice fruit. If, however, no selection is made, a fair show of best and worst should be made in order that dealers may know exactly what they are handling, and buyers may know exactly what they are buying. We sometimes jokingly say, "there is cheating in all trades except ours," and I wish we could say it truthfully of fruit growers, but I fear we can stand investigation in this respect as poorly as our friend the shoemaker or our neighbour the butcher.

I hope that this paper upon Quince Culture may increase the interest in this ancient fruit, and that instead of being consigned to unmerited oblivion, it may henceforth occupy a more prominent place on the tables of rich and poor, both in the town and in the country.

Mr. BEADLE.—I have fruited the Champion Quince, and it is not so early, but decidedly later than the Orange.

#### COMMITTEE ON NEW SEEDLINGS.

The President named the following gentlemen as the Committee on New Seedling Fruits, viz., Mr. Dempsey, Chairman, Messrs Allen, Wright, Gilchrist, and Linus Woolverton.

#### AMERICAN POMOLOGICAL SOCIETY.

The President submitted the following as his report of the Delegate appointed by this Association to attend the meeting of the American Pomological Society at Philadelphia.

#### REPORT OF THE DELEGATE APPOINTED TO ATTEND THE MEETING OF THE AMERICAN POMOLOGICAL SOCIETY.

The biennial meeting of the American Pomological Society was held this year in connection with that of the Pennsylvania Horticultural Society, Philadelphia being selected as the most suitable place for the joint gathering; the meeting was held on the 12th, 13th and 14th of September in the beautiful hall of the Pennsylvania Horticultural Society.

It was expected that the venerable President of the Society, Col. Wilder, of Boston, would have been present, but illness prevented him; this was a great disappointment to many who had looked forward with pleasure to the prospect of hearing his silver-toned voice once more, and listening to his words of counsel, always so full of meaning. Although unavoidably absent in body and within a few days of his eighty-fifth year, he sent an address to be read at the meeting, full of sympathy, in which he feelingly reviews the recent deaths in the ranks of horticulturists. Brief biographical sketches were given of Thos. James, James Vick, Wm. Schley, Arthur Bryant, Edward Pearce, Henry Hooker, Chas. Arnold, Joseph Johnson, B. Transon, Dr. Warder, and Henry Ellwanger, all of whom have passed away since the last meeting of the society. Referring to the loss of our own late associate, Chas. Arnold, he spoke of him in the kindest words, as "a careful observer, an eminently practical man, speaking of what he knew rather than of what he conjectured," and after briefly revising his work in cross-fertilization and other departments, said, "he was a man of great enthusiasm, of good judgment, and his loss is greatly to be deplored by us." This aged patriarch among fruit-growers thus closed this "In Memoriam" part of his address: "These and other friends have gone before us to that better land



where we trust they are now partaking of fruits from the tree of life that perish not with their use. Thus one after another of our associates is passing away, but this is the order of nature.

“Fruits have their time to ripen and fall;  
Leaves have their time to wither and dry;  
Man has his time to flourish and fade,  
All must be cut by Time's ruthless blade.  
But though the fruits of earth may all fall,  
And none be left to tell the sad tale,  
Still there's a land of promise on high,  
Where fruits never fall, men never die.”

Among other interesting topics discussed in this address was one which might well be considered by this Association, viz., the propriety of adopting some system by which the use of indecorous ostentatious or otherwise inappropriate names for fruits may be avoided, and the nomenclature thus simplified. The importance of constantly producing new varieties from seed, either fertilized naturally or crossed with other sorts, was also urged with much force as the most promising of all fields of horticultural industry.

Col. Wilder was re-elected President of the Society, Mr. P. J. Berckmans, of Augusta, Georgia, 1st Vice-President, and Prof. W. J. Beal, of Lansing, Michigan, Secretary.

A large proportion of the time appropriated to the sessions was occupied in discussions on the fruit lists, the merits and demerits of the newer varieties being thoroughly canvassed. Some interesting reports and papers were presented, among the latter, one by Prof. Riley, of Washington, on recent advances in Horticultural Entomology, was listened to with much interest. In the course of his remarks the speaker referred to recent progress in the discovery of suitable remedies for insect pests, special reference being made to kerosene emulsion and pyrethum powder, he also exhibited several forms of apparatus devised for the proper distribution of insecticides.

The exhibition of fruits and flowers under the auspices of the Pennsylvania Horticultural Society was very fine. Mr. E. E. Satterthwaite, of Pennsylvania, exhibited a very fine collection of pears embracing fifty varieties, for which he received a first premium. Excellent collections were also shown by the President, Hon. Marshal P. Wilder, of Boston; Ellwanger & Barry, of Rochester; William Parry, of N. J., and others. One of the finest collections of apples and grapes was exhibited by the Minnesota State Horticultural Society; among the apples in this collection were a number of the newer hardy Russian varieties which were examined by many with a great deal of interest. J. H. Ricketts, of Newburgh, N. Y., had a fine exhibit of his seedling grapes, besides which, there was a good display of Duchesse, Prentiss, and Niagara. Mr. Parry received a special premium for his exhibit of the Kieffer Pear. He showed this variety not only in large quantities in dishes on the tables, but the pillars in the fruit room were tastefully ornamented with branches cut from the trees, displaying in a marked manner the productiveness of this variety, the ages of the trees from which these branches were taken was also given, which added much to the instructiveness of the exhibit.

The lower story of the Horticultural Hall was devoted to fruits, while the upper part was gorgeously decorated with ornamental plants and flowers, many of them exhibiting marvellous beauty. There were large collections of Palms, Orchids, Nepenthes, Caladiums, Marantas, Dracenas, Coleus, Begonias, Crotons, Ferns, Lycopodiums, Selaginellas, and a host of other plants, including many rare novelties. Among the most attractive portion in this department was an exhibit of a collection of rare water plants by Mr. C. D. Sturtevant, including the celebrated Victoria Regia, the leaf of which was as large as a good-sized round table and the flower when expanded fully six inches across.

The display of cut flowers is said to have been the finest ever seen on this continent, and the magnitude of the floral designs far surpassed anything of the sort ever seen before by your Delegate.

The afternoon of the closing day was devoted to sight-seeing, when the visiting members were driven in carriages to the public buildings, Academy of Fine Arts, Girard College, and through portions of Fairmount Park to Horticultural Hall, where some considerable time was spent in examining the magnificent collection of plants, shrubs, and trees accumulated within and about that building.

In the evening of the same day the members of the Pennsylvania Horticultural Society entertained the Delegates by a public reception and banquet in the magnificent assembly room of the Union League. Among the invited guests were many distinguished citizens of Philadelphia; the occasion was a most brilliant and enjoyable one. During the evening your Delegate, who was assigned a post of honour on the platform as the only representative from Her Majesty's Dominions, had an opportunity of saying a few words to the audience on the progress of Horticulture in Canada and the good work being done by our Fruit Grower's Association, in response to a toast embodying these sentiments. About midnight the assembly dispersed, each visitor carrying with him to his home pleasant recollections of the hospitality of the good citizens of Philadelphia.

### QUINCE CULTURE.

The Convention then returned to a consideration of the topic of Quince culture.

Mr. BEADLE.—The paper by Mr. Woolverton that I read is correct in this, that there are comparatively few Quinces grown in this Province; and I can hardly understand why in the part of the country in which the Peach grows, and in which the Quince might be grown successfully, so few Quinces are grown. In our St. Catharines market it commands a good price—pays well for growing it. I would call the attention of fruit growers to this fruit, which has been neglected, and in which I believe there is money if you will only inform yourselves as to the soil, mode of culture, and marketing of the crop. It is a fruit that is valuable in itself and is valuable for flavoring purposes. The cores and the peelings of it make beautiful jelly. You can put all the pulp up in cans or preserve it for use in the winter, and you can make jelly out of the cores and skins.

Mr. A. M. SMITH.—I have fruited the Champion Quince, and I think Mr. Woolverton is a little wrong with regard to the time of its ripening; it is a later Quince. It is a much longer keeper, too. I have kept them up to midwinter in good condition. Two years ago I was buying apples through this county, and particularly in Norwich, and I was surprised to find there some beautiful Quinces, and in a great many different sections, too. The Quince seemed to flourish admirably there, and I wondered why it was not cultivated to a larger extent. The people did not seem to cultivate it for market, but simply for their own use and that of their neighbours, and a good many of them did not seem to know the value of it. I posted up a man who was working for me, and he bought some and shipped them to Toronto at quite a gain, I believe.

A MEMBER.—Do you know what they sold for in Toronto?

Mr. WOOLVERTON.—Seventy-five cents to a dollar.

Mr. GOTT.—Will Mr. Smith tell us the conditions under which those Quinces that he speaks of were grown? We find great difficulty in growing Quinces in our section.

Mr. SMITH.—The principal conditions were that they were growing in the corners of farmers' fences, where they had no attention at all. They were the Orange Quince mostly.

Mr. WOODWARD.—We grow some Quince trees and occasionally some Quinces. We do not consider them very reliable as croppers, but I believe that has been owing more to the way in which they have been managed than to any other cause. We grow mostly the Orange Quince. There are a few of Rae's Mammoth grown. I think the great mistake that we have made in Quince culture has been in ploughing, so as to keep the ground level. That keeps the roots near the surface. In my own orchard the trees used to drop their leaves badly. Since then I have done better by cultivating towards them and mulching them with grass. The owner of one of the best Quince orchards I know of mulches his trees every year. He puts corn-cobs down about them. The Quince has not been appreciated as it ought to be as a fruit. For my eating—and I find others think the same—there is nothing more refreshing than Quince. For canning there is no better fruit.

Mr. A. McD. ALLEN.—The Quince has not been cultivated in our district much. It is generally, as Mr. Smith says, found in fence corners or other places where it receives little or no attention. I have found it profitable where it is thoroughly cultivated on a good soil, fed well, and with salt liberally applied on the topsoil. I find it as necessary to apply salt in that way to the Quince as to apply it to a bed of Asparagus. I have



thrown in the brine and salt from fish barrels, I think about a quart to a tree. Rae's Seedling is a very excellent variety. That is the same as Rae's Mammoth. The Champion I find a very much better one and a good keeper. I am satisfied if people knew the excellencies of the Quince it would be grown more.

Mr. WOOLVERTON.—I am of opinion more fruit would be got off the Quince trees without cultivation than with it. The simplest mulch, referred to in that paper, which I have tried is the coal ashes. In one plantation of Quinces where there is a great deal of grass, where they were not cultivated at all—indeed they were not cultivated from the first; they were planted in a piece of sod; they were mulched with coal ashes, and the result was very satisfactory. They have borne well. We have another orchard which we have had planted for a long while in which we have had the same experience.

Mr. MORRIS.—I do not know of any Quinces being planted out in orchards where they are regularly cultivated like other fruit. I have noticed Quince trees in places where they were apparently neglected that would be covered with fruit every year, and I have noticed them in gardens well cultivated where they would be blighted every year.

## ROSES.

Mr. WELLINGTON submitted the following as the report of the Committee on Roses :

There are so many valuable works published in which the culture and care of Roses are given in minute detail, that it seems almost out of place, in a necessarily short report, to go further than to recommend the best varieties for general cultivation in this Province. Still we often have heard the remark made that enough practical information is not given in our reports, and to meet the want of all as fully as possible your Committee have decided to briefly give a few ideas on soil, culture, etc.

The first point is to secure strong, healthy plants, and we believe that it pays in the end to buy two-year plants of most varieties, there being less risk in transplanting, and there is generally plenty of good bloom the first season. Just here let us strongly recommend all planters to set out their Roses in beds.

Do not isolate single plants in your garden, but mass in beds. The effect is brilliant and imposing, and whether it be the miniature bed of half a dozen plants or the grand display of 500 Roses massed, it is the only true way to grow them to best display their beauty. A circular bed is the best when convenient, which should be raised in the centre, sloping gradually to the edge. A bed twelve-feet in diameter will hold 150 H. P. Roses. You can either plant all bright colours, or beginning at the centre with the darker kinds, gradually shade until the outer edge is pure white.

Some prefer planting all of one variety in a bed, but this is entirely a matter of taste, the main thing being plenty of Roses.

## SOIL AND POSITION.

Choose the best place you have in your garden, where you can offer protection by means of hedge or fence from bleak and sweeping winds. You can clothe ugly fences by climbing roses and make them a thing of beauty as well as usefulness. A warm sunny position is also requisite. Try and allow them the morning sun freely, and if possible wholly or partially shade from the fierce rays of the afternoon.

A certain amount of sunlight is, however, essential. Many plant Roses under the shadow of over-hanging buildings, or close to large deep-rooted trees, and then wonder why the plants are always covered with mildew and why they do not blossom freely.

Roses do well in any ordinary garden soil that is free from standing water and well drained. When there is much clay there should be added wood and coal ashes, lime, burnt earth, etc., to make it friable; when sandy or too light add clay and leaf-mould until you have sufficient body. All soil must be thoroughly manured and well worked.

The best manure is one-third each of cow dung, rotted hops and turfy loam. Horse dung is better for heavy soils than light, and cow manure is not as good for soils inclined to be wet. All animal manure can be used, however, for Roses, but should always be thoroughly composted.



In dry weather watering well with liquid manure will always be a great benefit. Never allow new manure to come in contact with the roots. If used at all, spread on top of the soil as a mulch. This is good in the autumn.

### PLANTING.

Roses grown out of pots in nursery row should be planted while in dormant condition, either in fall or spring. Plants propagated from cuttings on their own roots should be set as nearly as possible as grown in nursery, but grafted or budded plants should be set so that the junction of the bud or graft will be two inches beneath the surface of the soil. In this way there is less liability of suckers, and there is a chance for the plant to send forth roots from the bud or graft.

One important feature almost wholly neglected is pruning. Much can be learned by practical experience, but as a rule there is not enough pruning done. The tendency is to set out plants just as they arrive from the nursery, and this is often the chief cause of the young plant failing. The sap has too many buds to nourish, and there is a weak growth, the bud finally withering and drying away. Shorten back H. P. Roses as a general rule to two or three buds, and if the weather is very hot shade the plant for a few days until it gets established. Be sure and cut away all bruised or broken roots. They will then send out fine fibrous roots of great value to the plant.

The late H. B. Ellwanger, in his excellent book on the Rose, lays down the following excellent general rule on pruning:—"Plants of delicate habit and weak growth require severe pruning; those that are vigorous in growth should have the shoots only moderately shortened, but the branches well thinned out." This refers mainly to established plants. For young transplants prune to two or three buds. With many of the H. P. varieties a summer pruning should be given as soon as the June blossoming is over, as it helps the formation of flower-buds later in the season.

### INSECTS AND DISEASES.

We cannot, on this subject, do better than quote, verbatim, from H. B. Ellwanger on the chief enemies of the Rose:—

"*The Aphis* (*Aphis Rosæ*) or Green Fly, is well known by all who have grown roses. It is a small green louse, about one-eighth inch in length when fully grown, usually wingless. Their bodies are oval and soft; they secrete a sweet fluid, of which ants are very fond. The presence of ants on roses is good evidence, did we require it, that the Aphides are at work. They are very prolific in breeding; Reaumur estimates that one individual in five generations may become the progenitor of nearly six thousand millions of descendants. Through their slender beaks they suck the juice of the plant, always working at the tender shoots, and in a short time will, if unmolested, destroy the vigour or vitality of any rose they infest. Much the best destructive agent to use against them is tobacco smoke; when this cannot be applied, a liquid solution, made from tobacco stems or leaves, or from quassia, will be found an efficient method of working their destruction. Take four ounces of quassia chips, or tobacco stems, and boil them about ten minutes in a gallon of soft water; strain off the chips, and add four ounces of soft soap, which should be dissolved in it as it cools, stirring well before using. It may be applied by dipping a whisk broom in the mixture and sprinkling all shoots that are infested. Whale oil soap, dissolved in water, is also a useful remedy."

*Mildew*.—This is a fungus disease often caused by great and sudden atmospheric changes, and by a long continuance of damp, cloudy weather. The best proved remedies are sulphur and soot; one of these should be applied the moment the disease makes its appearance; the plants should be sprinkled with water, so that the substance applied will adhere, or else let it be put on early in the morning while the dew is yet on the plants. Some localities are much more subject to visitations of this disease than others, and in such places care should be taken not to plant varieties that are known to be specially liable to mildew. As it is contagious, spreading from one plant to another, we should advise the destruction of such sorts as belong to the Giant of Battles type; better it is to

sacrifice a few kinds than that all should be disfigured with this annoying fungus. Generally mildew makes its appearance in the autumn, when the nights grow cool; at this season it works but little harm, and may be disregarded, since the plants have made their growth and the wood is nearly, or quite, ripe.

*The Red Spider*—Is a most destructive little insect, which generally commits its ravages in the greenhouse; they only make their appearance when favoured with a hot, dry atmosphere.

These insects are very small, scarcely distinguishable by the eye, if isolated; they are of a dark reddish-brown colour, found on the under sides of the leaves. They cause the foliage to assume a yellow tinge, and will soon make sickly the plant they infest. A few applications of whale-oil soap dissolved in warm soft water will often destroy them; this can be applied with a syringe, taking care to throw the water upward to reach the leaves affected late in the afternoon, and then washed off with pure water the following morning. This insect does not attack plants that are syringed with water daily, and all plants grown under glass, not in flower, should be sprayed regularly. When a house that has been infested with Red Spider can be emptied of the plants, it is well to burn sulphur on charcoal embers; the fumes from the sulphur are fatal to nearly all insect life, and a house can by this means be soon freed from this insect; as burning sulphur is also destructive to plant life, this process can only be used in emptied houses, unless only a slight quantity be used at a time.

*Rose Hopper, or Thrip* (*Tettigonia Rosæ* of Harris).—This is perhaps the most troublesome pest with which the rose is afflicted in the open air. It is a small, yellowish-white insect, about three-twentieths of an inch long, with transparent wings. Like the Red Spider, they prey upon the leaves, working on the under side; they seem to go in swarms and are very destructive to the plant, soon causing the foliage to assume a sickly yellow appearance. As they jump and fly from one place to another, their destruction is less easy to accomplish than is the case with other enemies. We have found syringing the plants with pure water, so as to wet the lower side of the leaves, and then dusting on white hellebore, will destroy or disperse them. Another remedy, nearly or quite as good, is a solution of whale-oil soap, which must also be applied so as to reach the leaves from beneath.

*Rose Caterpillar or Leaf Roller*.—There are several kinds of caterpillars belonging to the order called *Lepidoptera* which prey upon the rose. They are the young of moths or butterflies, varying from one-half inch to three-quarters of an inch in length. Some of these are green and yellow, others brown. They all envelop themselves in the leaves or burrow in the flower buds. Powdered hellebore sprinkled over the plants will prevent in a large measure their moving over the plants, but the only method of killing them which is really effectual is by crushing between finger and thumb.

This crushing process may not be considered an agreeable pastime, but it must be done, and fastidious people can either delegate the work to others or go armed, *not cap-a-pie*, but with gloved hands, and perform the work themselves. It is time to look out for these marauders when the buds are formed and begin to show signs of plumpness.

*Rose Chafer, or Rose Bug*.—This (the *Melolontha subspinosus*, of Fabricius) is a brown beetle, a little less than one-half inch in length, which comes from the ground about the second week in June, or when the Damask Rose is in blossom.

Many localities are never troubled with this pest; where it does appear it is never alone, but in swarms; the insects attack the flowers in preference to the foliage, and seem to be more fond of white and light-coloured flowers than of those which are dark. In a very short time they entirely disfigure and greatly injure the plant which they attack. An application of Paris green dusted over the plants is very destructive to them. The application of tobacco water, whale oil soap, etc., is useless, for in order to have any effect upon the bugs the solution would have to be made so strong that it would work injury to the plants.

*Rose Slug*.—These slugs are the larva of a saw-fly, called by Harris *Selandria Rosæ*, an insect about the size of a common house fly, which comes out of the ground during May and June. The female flies puncture the leaves in different places, depositing their eggs in each incision made. These eggs hatch in 12 or 15 days after they are



laid. The slugs at once commence to eat the green portion of the leaves, and soon make great inroads upon the foliage if not checked. They are about one-half inch long when fully grown, of a green colour, and feed upon the upper portion of the foliage. The best remedies are powdered white hellebore or a solution of whale oil soap.

*White Grub.*—These grubs are the young of those buzzing, sticky abominations known as May-bugs. The beetles are thus described by Harris :

“During the month of May they come forth from the ground, whence they have received the name of May-bugs or May-beetles. They pass the greater part of the day upon trees, clinging to the under sides of the leaves in a state of repose. As soon as evening approaches they begin to buzz about among the branches and continue on the wing till towards midnight. In their droning flight they move very irregularly, darting hither and thither with an uncertain aim, hitting against objects in their way with a force that often causes them to fall to the ground. They frequently enter houses in the night, apparently attracted as well as dazzled and bewildered by the lights. After the sexes have paired the males perish, and the females enter the earth to the depth of six inches or more, making their way by means of the strong teeth which arm the forelegs ; here they deposit their eggs. . . . From the eggs are hatched, in the space of fourteen days, little whitish grubs, each provided with six legs near the head, and a mouth furnished with strong jaws. When in a state of rest these grubs usually curl themselves in the shape of a crescent.” These annoying pests live in the earth for three years, feeding on the roots of roses and other plants, and give no sign of their presence till the plant on which they feed commences to wither or turn sickly.

So soon as evidence is given of their ravages the plant should at once be dug around and search made for the grub, that his destruction may save other plants from death. The grub is more fond of the roots of strawberries than of any other food, and if these berries are grown alongside of roses a careful lookout must be had.

It is a fortunate thing that the grub does not confine himself to a rose diet, else would the culture of our favourite flower often be conducted with more plague than pleasure or profit

#### VARIETIES.

There are so many truly excellent varieties, and the list is constantly increasing, that it is difficult to condense the list sufficiently or to know which varieties to leave out. We give below what we believe to be the best from every standpoint, and while many of the varieties omitted would be considered as worthy a place in any collection your committee have felt it desirable to condense the list as near as possible to meet the needs of the amateur :—

#### CLIMBING ROSES FOR CONSERVATORIES.

*Celine Forester.*—Pale yellow, deepening towards the centre ; the hardiest of the tea-scented section.

*Lamarque.*—White, with sulphur centre ; flowers in clusters ; generally seven leaflets. A magnificent climbing rose under glass.

*Solfaterre.*—Raised from Lamarque, sulphur yellow, large, double or full, slightly fragrant. An excellent climbing rose and valuable as a stock on which to bud Teas.

*Gloire de Dijon.*—In colour, a combination of rose, salmon and yellow ; flowers very large, very full, good globular form, the outer petals inclined to fade. A very useful rose, probably the hardiest of the Teas.

*Marie Berton.*—A seedling of Gloire de Dijon, flowers pale yellow, globular ; the most free flowering of all the seedlings from Gloire de Dijon. Flower-stems very long and stout ; lustrous, handsome foliage. A grand yellow rose, only surpassed by Marechal Niel, and so far as healthy habit and some other qualities go, it excels that splendid sort

#### MONTHLY ROSES.

*Agrippina.*—Introduced to England from China in 1789. Rich crimson, specially valued for its fine buds. A useful sort for bedding out and for forcing. The best of the class.



*Hermosa*.—Bright rose, medium or small size, double; constantly in flower, bushy habit.

*Catherine Mermet*.—Flesh colour, with the same silvery lustre seen in *La France*; large, full, well-formed; not very productive, yet not a shy bloomer, very beautiful in the bud; when the flowers expand they exhale a delightful perfume. The finest of all the Teas.

*Isabella Sprunt*.—A sport from *Safrano*, sulphur yellow, very beautiful in the bud. Well known as one of the most useful kinds.

*Bon Silene*.—Hardy, deep salmon rose, illumined with carmine, medium size, semi-double, highly-scented, very free flowering. This is only desirable in the bud state, for many years it has been a leading kind for forcing; the English florists have not yet discovered its value.

*Mad. Bravy*.—Creamy-white, large, full, of very symmetrical form and great fragrance. One of the most beautiful and useful in its class.

*Marie Guillot*.—White, faintly tinged with yellow, large, full, of splendid form. One of the most beautiful Teas; would that it were fragrant.

*Monsieur Furtado*.—Yellow, medium or small size, well formed, very full; an exquisite sort, of good habit, not nearly so much grown as it deserves.

*Marie Van Houtte*.—Pale yellow, the edges of petals often lined with rose, well formed; of good habit, and in every respect a most charming sort. The finest of all Teas for out-door culture.

*Odorata*.—Of Chinese origin, brought to England in 1810. Carmine fading to blush, large flowers, somewhat loose, but good in the bud; one of the most fragrant. The larger number of the Teas are descendants of this sort.

*Perle des Jardins*.—Canary-yellow, large, or very large, full, well-formed, stiff stems, very free; the leaflets are five to seven in number, deeply serrated, very dark and glaucous. A superb sort for forcing, and fine also in open air.

*Marcchal Niel*.—Supposed to be a seedling from *Isabella Gray*. Deep yellow, very large, very full, globular form, delightfully fragrant; the finest of all yellow roses; it is of delicate constitution, and requires very careful treatment to produce satisfactory results. It is only adapted for culture under glass, and even then the inexperienced would do better not to attempt its culture.

*La France*.—From seed of a Tea-rose. Silvery-rose, changing to pink, very large, full, globular; a most constant bloomer, and the sweetest of all roses. If the buds remain firm by pressing gently the point and blowing into the centre, the flowers will almost invariably expand. An invaluable sort.

*Madame Lambert*.—Rosy-salmon, deepening towards the centre; the colour is variable, sometimes being a rosy-flesh; the flowers are large, very full, and good. This variety is not so refined as many others, but is of excellent habit, free-blooming qualities, and is to be considered one of our most useful Teas.

#### MOSSES.

*Etna*.—Bright crimson, very double, superb.

*Crested Moss*.—Discovered on the wall of a convent near Fribourg, and sent out by Vibert, 1827. Deep pink coloured buds, surrounded with a mossy fringe and crest: free from mildew. A fragrant, very beautiful rose.

*Countess of Murinais*.—White tinged with flesh.

*Captain John Ingram*.—Purple-crimson colour, non-permanent; dark small foliage in five leaflets.

*Glory of Mosses*.—Pale rose, very large, full, flat form; not attractive in the bud, the foliage is very large.

*Madame Edward Orty*.—Carmine-red, of medium size, full, one of the best in the class.

*Perpetual White*.—White, tinged with flesh, flowers in clusters, medium size, semi-double, or double, coarse form, but little mossed.

*Princess Adelaide*.—Pale rose, medium size; not very mossy, but good in bud and flower; dark foliage, which is often variegated.

*Salet Moss*.—Light rose, medium size, flat form, fairly good buds, very free. The best in the class.

*William Lobb*.—Light crimson, purple, large and double.

#### HYBRID PERPETUAL AND HYBRID REMONTANT ROSES.

*Alfred Colomb*, we have found to endure our very changeable climate remarkably well, and do not hesitate to recommend it to those who are far from being experts in rose growing, as a most useful sort; the flowers are large, well formed and highly fragrant, and sufficiently brilliant to please those who prefer showy roses.

*Anne de Diesbach* is among the most hardy and makes a very desirable garden rose. Its shade of carmine when freshly open is most exquisitely beautiful, while the size and fulness are such as to satisfy the most exacting. Besides this, it is fragrant.

*Alba Carnea*.—White with delicate pink shading, moderate size; free bloomer; very beautiful.

*Baron de Bonstetten*.—Pleases well. It is one of the Prince Camille de Rohan type, and very much resembles it in form and colour, being rich velvety maroon, but has seemed to be somewhat more full. This is one of the new roses.

*Baroness Rothschild* is a great favourite. We are strongly inclined to place it in the front rank, nay, to say it is the grandest rose of its colour. Is there anything in roses more delicately beautiful than its soft pink shade? Do any excel it in symmetry of form? Yet, alas! it is without fragrance.

*Baronne Prevost* is a very old rose that has stood by us so long and faithfully when others have failed, that we must speak well of its hardiness, floriferousness, pleasing rose colour and full habit. We would like its form better if were not so flat. It is quite fragrant and this may atone for some lack of elegance in the form of the flower.

*Beauty of Waltham*.—When we first received this from W. Paul, who sent it out some twenty years ago, and sniffed the fragrance of its rosy crimson flowers, we thought it the best of its class, and it is a fine rose, well worthy of a place in a select collection.

*Baronne de Maynard*.—White, edge of petals often tinged with pink; small size, compact form.

*Comtesse de Chabreillant*.—Although in cultivation for a quarter of a century, has lost nothing by long acquaintance in our esteem. Its delicate satin-pink colour, its full double form, and modest size, combined with abundant fragrance, unite to make a lovely flower. There is a grace and fascination about it to us that we find it difficult to express.

*Charles Margottin* belongs to that fiery red class which might well have been used by the Spanish Matadors to dangle before the eyes of their wild bulls to spur them on to madness. We like its large, well-formed flowers, and the steadfastness with which it retains its colour under our burning sun.

*Climbing Jules Margottin*.—Flowers are the same as in the old sort, except being a little smaller, and for this reason it is finer in the bud state. The best of all the climbing sports; highly commended as a useful pillar rose.

*Countess of Serenye*.—Said to be raised from LaReine, but it shows more of the Jules Margottin characteristics. Silvery-pink, often mottled; a full, fine-shaped globular flower, of medium size, slightly fragrant; wood, light-green, foliage darker, thorns red, seven leaflets. One of the most distinct; of great beauty when grown under glass.

*Caroline de Sansal*.—Flesh colour, deepening towards the centre; large, full flowers, flat form, often indented; subject to mildew; very hardy, beautiful when in perfection; generally it is of better quality in September than in June.

*Coquette des Alpes*.—White, tinged with blush, size medium to large, semi-cupped form; the wood is long-jointed. A very desirable white rose.

*François Michelin*.—Raised from LaReine. Deep rose, tinged with lilac, very large, full, of fine globular form; fragrant, free blooming. The wood and foliage are light-green, erect habit, thorns not numerous, wood long-jointed, the foliage somewhat crumpled. A

very distinct choice sort, excelling in June and July when other kinds are past their prime, and also in the autumn.

*General Washington*.—Raised from Triomphe de l'Exposition. Red, shaded with crimson, large, very full, flat form; a profuse bloomer, and when in perfection, a very fine sort.

*General Jacqueminot*.—A probable seedling from the old Hybrid China Gloire des Rosomanes. Brilliant crimson, not full, but large and extremely effective, fragrant and of excellent hardy habit.

*Joasine Hanet*.—Belongs to the old Portland group. Deep-rose, tinged with violet, medium size, full-quartered shape, fragrant, very hardy, a profuse bloomer. The colour and form are bad.

*Jules Margottin*.—Probably from LaReine, carmine rose, large, full, somewhat flat, slight fragrance, five to seven leaflets, foliage light-green and somewhat crimped, wood armed with dark-red thorns, free-flowering and hardy.

*LaReine*.—Glossy rose, large, full semi-globular form, somewhat fragrant; the foliage slightly crimped, five to seven leaflets. A very hardy, useful rose, though no longer the queen.

*Louis Van Houtte*.—Said to be from Chas Lefebvre. Crimson-maroon, medium-size, sometimes large, full, semi-globular form; large foliage, fewer thorns than most other dark roses, highly perfumed. This is a tender sort, but it is very free-blooming, and decidedly the finest crimson yet sent out.

*Mad Victor Verdier* has given us good satisfaction. Its bright crimson colour, shaded with carmine, is very effective; the size is large, form excellent, and it is very fragrant.

*Marie Baumann* is a gem, like Alfred Colomb in colour, but of a brighter shade. The flowers are quite large, beautifully formed and deliciously fragrant, and they are produced in great profusion.

*Marshal Forey*.—Crimson; one of the richest dark-shaded roses; cupped, good size, and a free bloomer; very hardy.

*Mabel Morrison*.—A sport from Baroness Rothschild. Flesh-white, changing to pure-white; in the autumn it is sometimes tinged with pink; semi-double cup-shaped flowers. In all, save substance of petals and colour, this variety is identical with the parent, though not so full as we would like.

*Paul Neyron* is simply immense, a Jumbo among roses. It is slightly fragrant and very double. The plant is a free bloomer and vigorous grower. It suffers a good deal from our winters, so much, that we regard it as somewhat tender.

*Pierre Notting* deserves kind treatment and a place in every garden if for no other reason than its abundant fragrance. In addition, however, it is a lovely dark rose, very deep crimson with a shading of violet, large and of a fine globular form.

*Prince Camille de Rohan* has an indescribable rich, soft velvety lustre to its deep shade of crimson that has gained for it a lasting place in our regard. It is, perhaps, not quite as double as we could wish, but its colour is so truly splendid that we cannot do without the Prince.

*Victor Verdier*.—Bright rose with carmine centre, a very fresh shade but not permanent, semi-globular form, of good size, not fragrant; very free, the wood is all but smooth, the foliage lustrous. This variety is doubtless of Bourbon origin; it is a beautiful rose, but with its entire progeny is more tender than any other types in the class.

*Xavier Olibo* is another very deep crimson rose that makes a grand display with its large richly-colored flowers. When its roses are just open and yet studded with the dew-drops of the morning it is beautiful indeed, but the hot mid-day sun fairly scorches its petals, which seem to absorb the heat to their own destruction.

#### OUT-DOOR CLIMBING ROSES.

*Baltimore Belle*.—Pale blush, changing to white, very full and double.

*Gem of Prairies*.—Believed to be from Queen of Prairies with Madame Laffay. Rosy-red, occasionally blotched with white; large, flat flowers, slightly fragrant.



*Queen of the Prairies*.—Rosy red, frequently with white stripe, medium or large size, double; foliage large, five leaflets, quite deeply serrated.

*Greville, or Seven Sisters*.—Blush tinged and striped, with many shades, small or medium size.

#### SUMMER ROSES.

*Auretti*.—Fine, dark velvety purple; globular and double.

*Harrison's Yellow*.—Medium size, golden yellow, semi-double, generally has nine leaflets, a freer bloomer than Persian yellow. This is believed to be a hybrid between the common Austrian and a Scotch rose.

*Magna Charta*.—Pink, suffused with carmine, large or very large, full globular; foliage and wood, light green; numerous dark spines, a fragrant excellent variety.

*Madame Hardy*.—White, large, very full, flat form, very fragrant; sometimes comes with green centre, but very beautiful when in perfection. A difficult sort to grow from cuttings.

*Madame Plantier*.—Pure white, above medium size, full, flat form, seven leaflets, foliage rather small; one of the best white roses for hedges and for massing. Early in the season the flowers are produced in great abundance.

*Persian Yellow*.—Bright yellow, small, nearly full, well formed; small foliage, faintly scented like the Sweet Briar; seven leaflets; the wood is chocolate-brown in colour, armed with numerous brown thorns; it is the finest of all hardy yellow roses. It must not be closely pruned; it is desirable to grow more than one plant, and by pruning one this year in the usual way, and the other the next, annual crops of flowers may be had.

All of which is respectfully submitted.

W. E. WELLINGTON, Chairman.

D. W. BEADLE.

WM. SAUNDERS.

The PRESIDENT.—There is one rose, which I would call a cosmopolitan rose, without a reference to which, it seems to me, any report on roses would be incomplete. I mean the old Cabbage Rose. I think the Cabbage Rose, which is cultivated five hundred times more than any other rose in the world, should hardly be entirely overlooked in a report on roses. It is the rose from which we derive all the attar of Roses of Commerce.

Mr. MITCHELL.—I am perhaps too young a member of the Association to make suggestions, but I think that for general use these reports ought not to be quite so voluminous. People like myself, who only want half a dozen roses, hardly know what to choose out of so large a list. We would like to know of just a few roses which have succeeded best in our own country. I consider that the first Hybrid Perpetual in the list that was read, is perhaps the finest of all, the Alfred Colomb. The Louis Van Houtte is also a very good rose. I have noticed a fine new rose, perhaps excelling any of these; that is, the Marshall P. Wilder. If there is any new rose that is ever going to rival or excel any of our old roses, it will be this Marshall P. Wilder. It greatly resembles Alfred Colomb. I saw it last season on the grounds of Ellwanger and Barry.

The PRESIDENT.—Is that one of young Mr. Ellwanger's new roses?

Mr. MITCHELL.—Yes.

Mr. WELLINGTON.—That report was not got up for any one individual, we are too apt to look on these things from a selfish point of view, the common complaint has been that you do not in your Fruit Growers Association give information enough for the Amateur—that you talk as doctors—as wiseheads. Now, in preparing that report I had a special object in view, and that was to reach the class of people who do not obtain rose works, but who like to grow roses, or would do so if they could be taught how to grow them. Therefore I take up the subject mainly of situation; and that is a point that it is very necessary should be understood, because, as our worthy Secretary has remarked, to plant roses where the mid-day sun can get at them is almost useless. We must have a shady position. We want to have the morning sun, but we must guard them against the noon sun. I touched on that point as briefly as possible. In regard to the number of roses that are mentioned, we must remember that everybody is not content with half a dozen roses.

Out of the fifteen hundred or more roses, a great proportion of which are desirable, we have mentioned only about thirty varieties. To have any satisfaction with roses, we must mass them, and in order to do that effectually, we should not be content with half a dozen, unless our circumstances are such as to confine us to that few. Of course it is desirable to reach the majority of the people, and it is for that very reason that that report is prepared in that way.

Mr. GRAY.—I quite agree with my friend from Innerkip, that when we have these long papers before us treating of so many kinds, we cannot pick out of them the kinds we want. Of course there are a great many of these roses that a great many gentlemen know the value of. My friend from Zorra said he thought the Cabbage Rose was one of the finest roses. It grows better with me than any rose I have in my garden. It lasts longer, and I like it better than any rose I have.

Mr. WELLINGTON.—If Mr. Gray will read that paper he will find that I have simply come down as near as possible to the practical.

Mr. WRIGHT.—The criticisms, I think, have been well taken, especially that which our worthy President has made, namely, that we should add to that list the Cabbage Rose. It was suggested also that the Marshall P. Wilder should have been added. It appears therefore, that the report has erred in that the list has not been made long enough. For a long time I was the only subscriber to the *Horticulturist* in the neighbourhood of the County of Renfrew, and I was the only one that received the annual report. Consequently, all the women in that section came to me to borrow it, to get the list of roses, of which there has been some complaint made, in order that they might study the whole thing and pick out the ones they wanted; and they never found any fault with the Association on account of the length of the list of roses in the report. And I think when they get this report they will hardly consider the list long enough.

Mr. WELLINGTON.—The reason we did not put Marshall P. Wilder in the report was that we did not think it had been extensively enough tested yet to warrant us in doing so. I saw it on the grounds of Ellwanger and Barry. I have a very good opinion of it, but not having seen it tested outside of their grounds I thought it hardly desirable to place it in the report just yet.

Mr. BEADLE.—I want to emphasize what Mr. Wellington has said. That Marshall P. Wilder has not been disseminated through the country. No one knows anything about it but Ellwanger and Barry. This report was intended to recommend roses adapted to cultivation in Canada, and to be based on what we knew about their cultivation in Canada.

Mr. DEMPSEY.—I was surprised at the shortness of the list. That list of roses would not satisfy me at all even if multiplied by three. But if any one wants a short list which will give satisfaction just let him take the favourites of my wife and myself. If all the roses were to be taken from us but one I would choose La France, and my wife would stick to the old Cabbage Rose from the fact that she has a system of preparing from the petals of those flowers a flavouring which she uses for a great many purposes. La France I prize on account of its fragrance and beauty. From the time it blooms in the spring until the frost kills it we can go at any time and pick roses from it.

### THE BLACK SCAB ON THE APPLE.

The next topic discussed was "The Black Scab on the Apple; its Cause; can it be Prevented?"

Mr. CROIL.—I tried sulphur for it, and I would have great faith in that yet; but I did not apply it in the right manner. You remember that a couple of years ago it was suggested in a paper that sulphur should be put in an orifice in the tree. I adopted that plan. Mr. Saunders told me then—and I have found out he was right—that it would not work. He told me that sulphur was not soluble in the sap of a tree. I would suggest syringing with different substances. This disease has been a loss to me on my small orchard of certainly a thousand dollars a year, and I would be very happy to pay any gentleman who would tell me what to do for it.

The PRESIDENT.—These low forms of vegetable life to which this particular fungus belongs are perhaps easier destroyed by a gas known as sulphurous acid than by any other



means. This sulphurous acid is given off by common sulphur when it is exposed to the sun and the air, more especially when burned as when we burn a match. The same gas is given off from sulphur when distributed in our vineries in cases of mildew. The same thing destroys the mildew on the gooseberry. I do not know of any better way of applying it than by putting the sulphur in water. Of course sulphur will not dissolve in water, but the water will afford a means of distributing it. As the water evaporates a thin coating of sulphur will be left on the trees, and when the sun shines on this it will give off this gas. I do not say that this would be a remedy, but it might be tried.

MR. BEADLE.—We find sulphate of iron to be a good remedy for mildew on plants in the house.

THE PRESIDENT.—Sulphur and lime give off when exposed to the air another gas, a compound of sulphur and hydrogen, which seems to have a similar influence on these lower forms of life, and this sulphate of iron may give off some gas unknown to chemists.

MR. MORTON.—I do not know anything about it myself, but a friend of mine, a physician, claims he has found a remedy for the black scab. That is hyposulphite of soda. This is a cure for that peculiar fungus on the skin—I forget the name of it—which physicians say is a low form of vegetable growth. From the use of it in that disease he was led to make an application of it for black scab on the apple. I have not seen him since he began to make the experiment.

THE PRESIDENT.—The hyposulphite is a cheap article, and I suppose a pound of it would be enough for a barrel of water. So that it would not be an expensive experiment to try.

MR. CROIL.—It is only two years since our friend Mr. Arnold said he had shipped a hundred barrels of Fameuse that had not a spot on them. I do not think there is a gentleman in this room who can say so to-day. I think the disease is on the increase.

MR. BUCKE.—The Fameuse received in Ottawa from the west this year were very much spotted, while those from Montreal were comparatively free from spots.

MR. DEMPSEY.—Some years ago when we were obliged to resort to glass to get grapes to eat on account of not having varieties that would succeed in the open air, we used to take sulphur and place it in a pot and throw a stone of quicklime in and boil it up a little, and then we used to strain the liquor and place it in vessels. This was for the prevention of mildew. We used to put a little of this in the water that we syringed our vines with under glass, and so long as we used it we never saw any mildew on the vines. This would certainly be a very cheap remedy. It would not cost much to try it. It occurs to me that it might act as a preventive of this black spot. It adheres to the fruit and to the foliage. It always had a good effect.

MR. WELLINGTON.—I would make this suggestion, that a committee of gentlemen who are willing to conduct a series of experiments during the coming season be appointed on this matter, and that they report minutely at the next winter meeting. There is no doubt that this spot is growing more and more. The island of Montreal is the home of the Fameuse, but the spot is affecting that apple there more and more each year, and on account of it the planters there are not setting out any more Fameuse.

Pursuant to Mr. Wellington's suggestion the following gentlemen volunteered to experiment, viz., Messrs. Croil, Hickling, Woolverton, Dempsey, Gott, Martin of Woodstock, A. Mc. D. Allen, and Cornell of Collingwood.

THE PRESIDENT.—We have had some valuable information given us by our friend Mr. Woodward and by others that satisfies most of us, I think, that the use of Paris green for the codlin moth is a valuable remedy, and I would suggest that this committee experiment with it by syringing their trees with it mixed with water in the manner referred to.

MR. WOOLVERTON.—We have one quince tree that—as indeed were all the others—was affected very much by this scab, and it being near the house there has been quite a large amount of wood ashes applied to it. And this last year, when probably the spot was more prevalent than usual, the fruit on this tree was really very nice, very clear. This last year the spot extended to the Greening and the Northren Spy which I had never known it to do before.

MR. A. Mc. D. ALLEN.—For three or four years until this year I did not purchase a



barrel of the Fameuse, but this year we shipped very near a hundred barrels of very fine ones; the Fameuse this year in our portion of the country were very fine, hardly a spot to be seen; but for two or three years previously they were hardly worth picking off the ground.

Mr. A. M. SMITH.—I am surprised to hear this, because a short distance west of Mr. Allen we could not get a barrel that was fit to ship.

The PRESIDENT.—I think this discussion shows that this disease is mainly due to atmospheric influence, and that these spores are always in the atmosphere ready to attack the apple-tree when the conditions are favourable.

## PEARS.

The next question to be considered was "Why are not pears more largely grown, and which are the best varieties for the market?"

Mr. MITCHELL.—I have a few trees planted, but I find that I have to plant nearly half as many every year to replace those I lose.

Mr. BEADLE.—Is it the blight that kills them?

Mr. MITCHELL.—No, but some spot will come in the stem. I do not know whether it is the borer or what it is. In what little I have had to do with pears I have been very unsuccessful.

Mr. HATCH.—I have had a little experience in pears, but not much success; nearly two-thirds are gone from blight.

Mr. PARKER.—I have been trying to cultivate pears in my garden. I had several varieties of very healthy trees a few years ago. I thought I was going to have some very excellent pears, and the first and second crops were very fine; they were large, well formed, and well coloured—so fine that I was able to take the prize at our exhibition. But two years ago the Flemish Beauties were attacked by the blight, all but one, and that was a tree that had been very much stunted in its growth; did not fruit until it got to be a very large tree; I thought it ought to have fruited two or three years before it did. It fruited a year ago, and it fruited this last year, but the fruit was all spotted, and it would crack down nearly to the centre of the core after it got about ripe. The Bartlett's have done very well, as also have the Belle Lucratives. I have some of those that are very prolific, and that have not been attacked by the blight or spotted in any way. But so far as the Flemish Beauties are concerned, I have had to cut down three or four of my trees, and of others I have had to cut the best bearing portions down.

Mr. HATCH.—The blight has been very much worse this last year than in previous years.

Mr. STRACHAN.—When I was in Rochester during the summer I picked up a copy of the *Fruit Recorder*, in which there was a letter from a person who signed himself "A. K.," from Pelee Island. He mentioned that he had had no blight in his pear trees for quite a number of years; that he applied a strong solution of copperas; that all his neighbours around him who did the same thing had their trees perfectly free of blight also, and that those who had not applied that remedy had had their trees attacked as usual. I saw somewhere, some years ago, a recommendation to take a strong solution of that and apply it to the tree with a mixture of soft soap and cow dung, and in doing that I succeeded perfectly with a few trees. I had four trees attacked in 1875, which I have still, but which were very much injured by blight in the branch and also in the trunk. I pared off the thick bark of the trunk and tied them up in that way, and it was wonderful how the fresh bark grew in beneath the old bark. I did not take off the whole of the bark, but left the inner rind, although it was withered, and the bark grew anew, and the trees are very good ones still. I took up twelve trees before I sufficiently considered the way of preventing the disease spreading. Since then my trees have not been badly attacked until this year. This year a Belle Lucrative was attacked. It is not dead yet, and I may save it, but a large portion of it is gone. The solution of copperas is to be applied to the tree between the first of May and the end of May, or even later.

The PRESIDENT.—The term "copperas" in that case, I suppose, would mean sulphate of iron. The term "copperas" is also applied to sulphate of zinc.

Mr. STRACHAN.—By means of the same remedy another gentleman of this town saved a tree which was very much affected. He applied the cow dung to it and tied it round with rags, and the tree is now healthy.

Mr. SAWTELLE.—I saw the tree that Mr. Strachan refers to after it was experimented on, and last year it bore a bushel of very fine fruit. It is quite evident to me it is getting more difficult every year to grow pears. Some years ago, when I had a farm, I had no difficulty in growing very fine ones. A short time ago I visited that farm and found not even a stump of those trees left; they are all gone. The blight, I find, has attacked the Louise Bonne De Jersey and the Flemish Beauty.

Mr. MORRIS.—I believe there is more ignorance shown, and greater mistakes made in the growing of pears than in the growing of any other kind of fruit. Farmers, and people living in towns as well, will generally buy from two to six pear trees. They pay a long price for them, and of course they must plant them in their choicest piece of ground. In those locations the ground is so full of rich vegetable matter that the tendency is for the pear to make a second growth. Perhaps the trees will make an early growth that ripens up, and then they will put on a second growth, and I find that where they make this second growth they invariably blight. Instead of using vegetable manure I would use lime and unleached wood ashes. I have noticed that where pear trees are planted on high ground along the edge of ravines, where there is natural drainage, they are nearly always healthy. Another mistake that is made is the selection of varieties; of course we all know that some varieties have a great tendency to blight.

The PRESIDENT.—When I commenced pear growing on a tolerably large scale, I planted out two thousand trees. I selected one hundred and fifty varieties with a view to finding some that were free from blight. I had that theory that Mr. Morris refers to, strong on the brain then; but I got cured of it after a while. I grew trees free from blight for five or six years, and then they would take it. I would then replace them with other trees, with the same result. I then tried Mr. Morris's other plan of growing the trees on inferior ground, and that succeeded better. I took the poorest piece of ground I could find on the farm and planted the same varieties out in single rows, putting six of a kind together, I had twenty-five rows, I think—twenty-five varieties that I thought the most promising—and I must say that during the time since they were planted, six or eight years now, there has been much greater freedom from blight than there was when they were on ground that was strong and rich. Another curious experience I had. You all know that the Glout Morceau is usually regarded as one of the most liable to blight of any we have. On my grounds it was one of the last to blight and the least prone to blight. Dr. Reeder is a variety that I find remarkably free from blight. On the Asylum grounds in London, opposite my farm, there were ten trees of it planted fourteen years ago, and I believe there are nine of them there to-day, while the most of these other varieties planted have perished.

Mr. MORRIS.—I would pronounce the Duchesse, Beurre D'Anjou and Seckel, three of the freest from blight. Another mistake is in planting trees with a stem like an apple tree. Of course, buyers must have them that way; but the best way and the proper way to grow pear trees is without any stump at all, or letting them branch right from the ground, not more than a foot or a foot and a half any way. Then if any branches are struck with blight, you have other branches coming up, and you can allow them to grow in their place. I have seen pear trees struck with blight down to within a foot or two of the ground. The blight was arrested there, and from that they would branch out, and afterwards make good, healthy trees.

Mr. BEADLE.—I wish Mr. Woodward would tell us about an orchard of Beurre D'Anjou that Mr. Moody planted.

Mr. WOODWARD.—It blighted, I believe. He got one or two very good crops, and I think he let it overbear.

Mr. GOTT.—I am of the opinion that pear growing in the western counties, in our low, heavy, clayey soils, will succeed better than in some other soils. I know that on some of our farms that are of very heavy clayey soil, that scarcely any other kinds of fruit will grow on, plums and pears grow very well, and the fruit is beautiful—no sign of blight at all. As for the varieties that may be profitably grown there—I would not class



them according to whether they blight or not, because that question does not seriously affect us there—the Flemish Beauty is no doubt the pear of all pears there, and more people will plant that variety than any other on the list, because almost everybody knows it. The Bartlett is also well known, and a very profitable pear. The Louise Bonne de Jersey is a great bearer, and gives great satisfaction where the trees have arrived at any kind of maturity. The Winter Nelis and the Lawrence are very successfully grown, too.

Mr. DENTON.—About twelve years ago I planted in my garden about five varieties of pears, the Seckel, Flemish Beauty, Bartlett, White Doyenne, and Louise Bonne de Jersey. They came into bearing, and they bore profusely, and the fruit was magnificent. Then came the blight. The Flemish Beauty was struck first, and I pared it away until we got it all out. The Seckel followed suit, and then the White Doyenne. I received a premium on the fruit from another Flemish Beauty, in, I think, the very same year—perhaps the year before. That tree has grown, and is now bearing—somewhat like the other one, but doing well. That has not been blighted yet. The Bartletts were touched. They recovered. This summer we had a splendid crop of them. The Louise Bonne de Jersey has never been touched, but is still in good bearing condition. So that I lost three out of the five varieties. I thought it was owing to their heavy bearing that they were the subjects of blight, they being too feeble to stand against it.

The PRESIDENT.—Sometimes it is attributed to feebleness and sometimes to too much strength; but every theory that is set up is knocked down by the next person who speaks.

Mr. A. M. SMITH.—We grow some varieties that have withstood the blight. Some twenty-five or thirty years ago, in company with Mr. Woolverton of Grimsby, we planted a specimen pear orchard of some fifty varieties, and among them the Glout Morceau. It has been mentioned, I think, that that was about the first one to blight. I visited that orchard this fall, and I think there was just four of those original trees that had escaped, and I think those four are, the Brown Beurre, Tyson, Seckel, and—I forget the other now; I think it was a Buffam.

Mr. GOLDIE.—I would like to give the opinion of a gentleman who was formerly a prominent pear grower. That was the late President of this Association, the Rev. Mr. Burnet. He used to grow pears very luxuriantly, and had a great many varieties. One time I was visiting him I found a great many of them were blighted and cut out, and on my asking him what was the reason of it, what do you think he said? He said it was all on account of his second marriage—that while he lived like a bachelor all the sweepings from the garden, and sods from the walks, and ashes from the house were scattered all over his pear garden, along with old boots and shoes and other things of that kind that would act as a mulching, and it was mulched all over a foot or eighteen inches deep; but after he took another wife to himself she, like all the ladies, wished to have everything neat about the place, and she set the man to rake and clean up the whole surface of the ground. After that was done, he said, the blight came.

Mr. SCOTT.—Mr. Woodward says he has five thousand pear trees and none of them were ever blighted.

Mr. WOODWARD.—I cannot remember when I lost one from blight. Some of the finest trees I have have been blighted, but if you watch them carefully it does not do them any hurt. In fact it seems to do the Bartletts good if you cut the blight out. If I were going to plant to-morrow 1,000 standard pear trees I would plant 999 Bartletts, and I would put a Bartlett in the other space and take care of it. I put bone dust and salt and ashes on my orchard, and I have put on copperas. I have used in one year, I think, about six or eight or ten barrels of copperas. I have also thrown on lots of coal cinders and scattered them broadcast in the orchard. I do not know that any of these prevents the blight; I just put on what I think is good for the ground. Put a pear tree on the best ground that was ever made and take pears off it, and unless you put something back either the scab or blight or something else will come to destroy the trees. I cultivate my trees, and I manure them every year, and the Bartlett orchard I crop. I have an old Duchesse orchard, which was an old orchard when I got the place, and it has paid me well; it has borne remarkably well. Some of those old trees have grown out of shape, and they lie everywhere on the ground. I have picked as many as a barrel from a dwarf Duchesse tree, and still I do not pretend to have any specific. Last spring I was



down in New Jersey, and a friend of mine there gave me a lot of scions of the Kieffer pear. I put them in my satchel, and they were spoiling my clothes, so I took them out, and when I came home they were as dry as sticks. However, my nephew set them, and I do not think one of them missed growing; they grew remarkably. Last spring I think nearly all of them blossomed, and I think he said one of them set seven nice pears. The Kieffer is just as nice as it is possible to make a pear in colour and shape. It is not blight-proof, however. I do not believe the pear grows that is blight-proof. I have seen specimens of the Kieffer pear that I guess you could tell were pears without their having written on them, "This is a pear;" but if it was in the dark, you might mistake them for Quinces—they are about half and half. Still I think there is money in the Kieffer pear, for canning. It is certainly the best canning pear I have ever tasted. You all know the Bartlett is not a good canning pear; it becomes insipid. The Kieffer is a handsome pear, and it is very fragrant. It sells well in the market.

The PRESIDENT.—Do you cultivate all your pear trees, or do you leave any of them in grass?

Mr. WOODWARD.—They are all cultivated.

Mr. SCOTT.—I grow mine in grass.

Mr. WOODWARD.—Well, if I had such a soil as Mr. Scott has, I would grow mine in grass, but I have not got it.

Mr. SCOTT.—I leave my grass there; there is none of it taken off with the exception of what my hogs take in running through the orchard. The only thing that I have put on as yet have been ashes and salt; I use those rather plentifully. The only blight I have had, with the exception of one year that I had two trees blighted, has been on the Flemish Beauty.

The PRESIDENT.—After I had cultivated my pears, and seen they were all blighted more or less every year, I tried the grass. I kept a record of the trees for some years, and for a time they did seem to do better in the grass, and I thought it was going to be a good thing for them; but after a while I had to change my mind on that point. I have not any theories in regard to pear blight now.

Mr. SCOTT.—A pear tree ought to branch pretty low. None of my pear trees are branched higher than two feet from the ground.

The PRESIDENT.—Are they all standards?

Mr. SCOTT.—All standard.

Mr. WOODWARD.—Mr. Scott's pear trees are on those gravelly clay knolls.

Mr. SCOTT.—There is no gravel.

Mr. WOODWARD.—Well, it is stone. It is a very deep soil. It is something that the most of us have not got. I saw pear trees there last fall that made a growth of two feet or more standing right in that grass. His apple orchard is equally thrifty. I do not get any more growth where I cultivate, than Mr. Scott does in that grass. If I left my pear trees in grass, I would not get any growth at all to speak of—not more than two or three inches—and I would not get any growth of fruit. I would recommend Mr. Scott to leave his pear trees in the grass while they are growing in the way they are. I would mulch them.

Mr. GOTT.—How old is your orchard, Mr. Scott?

Mr. SCOTT.—About ten years.

Mr. DEMPSEY.—A number of years ago I took the pear fever, and I find it has been contagious over the country. I had been reading the work of VanMon's, of Belgium, and Thomas Rivers's "fruit garden," and I thought we could make perfect ornaments of pear trees. I took standard trees, and transplanted them once in two years, continuing to pinch them in and to maintain a low growth, and I succeeded in fruiting standard pears of not over three or four feet in height, perfect beauties. I used largely, sulphate of iron dissolved in water, applied in a liquid state. I was very successful, so long as I followed this theory out. I took pears to Mr. Ellwanger, in Rochester, that he could not recognize, common varieties, such as the Belle Lucrative. I took some pears there one time that weighed fifteen and a half ounces. That was the heaviest. Thirteen ounces was the lightest. I tell you this to show that this sulphate of iron does have an effect on the fruit. I also at that time grew several varieties in ten inch pots, and produced enormous

pears. We had Duchesse of Bordeaux pears that would keep as long as a turnip. However, the blight got among my pet pear trees, and I lost one block of them. This was the first experience I had with the blight. I had a block of pears that had been grown on the quince, and they were planted on rather a light soil, and as we had an open winter—heavy, freezing and no snow to protect the roots—I began in the spring to think there is a fire blight, but when I commenced to inspect the roots I saw they were all frozen. I had at this time a block of nice Flemish Beauty pears. Some of them had got to fruit. I almost worshipped my pear orchard, and so I planted another one of Flemish Beauties afterwards. After a little the blight got in, I was away from home considerably at that time; but when I would come home at night—the Saturday perhaps—I would go down through my pear orchard, and I could smell the blight, and I was disgusted with pear culture. There are only two or three of those Flemish Beauties now living, and they are producing scarcely anything. What was worse for me to get over was, that little spot would come on the pears early in the season, and they would crack clear to the core. The result is that we have not had a perfect specimen of Flemish Beauty pear for the last three or four years. The effect of that sulphate of iron and pinching system shows on one pear tree that I have yet. I have a White Doyenne tree that has been fruited for some years, and I let it do just as it pleased—cultivated around it every year and manured with wood ashes; and while I have had Flemish Beauties, White Doyennes, Bartletts, Beurre D'Anjou, and Beurre Clairgeau blighted all around it, that tree stands yet perfectly free from blight. There were some little spots on it last year, the first we saw on it. With respect to the profitableness of pear culture, I am satisfied it is more profitable than the culture of apples, provided your pears are properly grown, and a judicious selection of varieties is made—varieties that will succeed upon the soil you are wanting to plant—and provided the soil is well drained. I believe there can be more barrels of pears produced from an acre—take ten years for it after they come into bearing—than there can of apples. There are two varieties that I find have been so far almost free from blight. One of them particularly I have never seen any blight on yet, and I have some trees of it that will produce me six bushels to the tree this year. Most of them have been twenty years planted. This is the Doyenne Boussock. I have that planted on ground that was formerly a brickyard; I have it planted on a heavy loam; I have it planted on light sand; and everywhere I have it it is growing well. I do not care to eat the pear, but it is not so inferior either. We shipped it to Montreal, and shipped Bartletts at the same time, and they would bring from fifteen to twenty-five cents more a basket. The first two or three crops of that variety of pear—and of several other varieties—that we get are inferior in flavour, but as the tree attains age, the fruit seems to increase in size and in beauty as well as in quality. Now, I have not told you about the greatest failures I ever made. I went to the expense one time of importing about two hundred varieties. I have about half a dozen of those varieties left, some of which are doing tolerably well, and some are almost worthless. I have tried cultivation with my trees; I have grown them right in the sod. I have treated them in different ways. The last tree I had of one variety, the Vicar, was growing among some raspberries and blackberries that we were trying to get out of our garden. These bushes had grown as high as the pear tree. All the rest of the trees had blighted, and I just concluded I would leave this one as it stood. That tree has continued to live down to the present, about seven years I think, since the time I refer to, with the berry bushes growing right up through it, and I have not yet seen any blight on it; and every year I go and pick enough pears off that tree to get a prize. We do not use the knife on any of our pear trees, and since I quit pruning them we have less blight. I have a little pear orchard that we cultivate continuously. We do not take anything else off the ground for the reason that you have almost to get down on your knees to get under the trees. The trees are close together; they are allowed to branch very low, and the branches mix in with each other. We cultivate them regularly, and spread wood ashes once a year over the ground. That is all the fertilizer we use. We find occasionally a blighted branch, particularly on the Belle Lucratives. We find it this year on Beurre Hardy also. We find more on Clapp's Favourite than on any other variety. We have some varieties that are mixed in among those that I have never seen any blight on. One would be the Josephine De Malines. As a winter pear I care for nothing better than that. I fancy



we remove the blight as soon as we see it, we need not fear it very much so long as we are growing our pears on a well drained soil. Whatever we do in selecting a site for pear culture, let us select a site that is so drained that there is not enough moisture remaining in the soil to encourage a late autumn growth.

Mr. WOODWARD.—At my horse barn I dug out a place for throwing manure. There are two Bartlett pear trees standing right beside it, and they bear the best of any I have, and there never was any blight on them. I let my boy build a hen-house so that it comes right to the foot of a Bartlett tree, and that is the finest Bartlett tree, without exception, that I have ever seen—it bears every year till it is loaded down.

An exchange of courtesies between the President of the Association on the one side, and representatives of the Town of Woodstock present and the visiting American gentlemen on the other, then brought the proceedings of the Convention to a termination.

---

## SUMMER MEETING.

---

The Summer Meeting of the Fruit Growers' Association of Ontario, was held in the Town Hall, Berlin, commencing on Wednesday, the 25th of June.

The President, Mr. Wm. Saunders, of London, took the chair at 10 a.m., and in opening the meeting said :

GENTLEMEN,—It is my pleasing duty this morning to tender to those of our friends who are present a cordial welcome on behalf of the Directors of the Fruit Growers' Association of Ontario. The weather is rather unpropitious for our meeting, but we hope that it will prove an interesting and profitable one. The object of the Association, in taking its meetings from place to place, is to diffuse light on subjects in which we are all interested. I do not mean that we are light-bearers, but rather that we elicit light by stimulating discussion among the people of the different districts we visit, and in that way encourage and aid those who are endeavouring to advance the fruit interest of Ontario in the various parts of the Province. It is not my duty or my purpose to-day to detain you with any lengthened remarks. The duties of the Chairman are light, as he is sustained by our worthy Vice-President, Mr. Bucke, of Ottawa, whom I have much pleasure in calling upon to say a few words before we enter upon the discussion of the subjects to be brought before you.

Mr. BUCKE.—Gentlemen, I can assure you it is a great pleasure to the Association to be able to hold our present meeting in Berlin. This is the first meeting we have held here, and I have no doubt we shall find it both interesting and useful to learn of the condition and prospects of fruit culture in this locality. I think I need not add to what the President has said, but that we had better now enter upon the consideration of the very full and attractive programme which has been prepared for us.

## THE ENGLISH SPARROW.

The first subject of discussion, "The English Sparrow, its Habits, Food, and the Food of its young," was then taken up.

Mr. BEADLE.—This subject was suggested by a gentleman in Berlin, who said the people in this neighbourhood wanted further information on the sparrow question. As for me, I cannot throw much light upon it. I asked my son this summer to make some observations on the sparrow, and he told me the other day that he had been dissecting the stomachs of some young ones that he had taken out of their nests, and that he had found in them more fragments of grain than anything else, although he had also observed some traces of cabbage worm, which feeds on our cabbages.

Mr. H. L. JANZEN, (of Berlin).—The sparrow is not yet very numerous here, and I do not think we are as yet in a position to form an opinion on its merits or demerits.



Mr. A. M. SMITH, (of St. Catharines).—My small fruits, being some distance from the city are not troubled by the sparrow. I have noticed a few of these birds about my house and garden, but I have not suffered any particular injury from them as yet, except that they rob the chickens.

The PRESIDENT.—I hope no one will be deterred from expressing his mind freely on this subject, because a correspondent in the *Horticulturist* lately stigmatized those who oppose the sparrow as “sapient,” which, according to our secretary, signifies, “sap-headed.” The “poor little emigrant” has come across the Atlantic, and whether it is really useful or not, we wish to get at the truth. I hope the members will freely give us the benefit of their experience.

Mr. A. ROY.—I have noticed that since the sparrow has come to Berlin, the trees are freer from caterpillars and other insects. We have had them here now for about three years.

The PRESIDENT.—Have you noticed any particular species of caterpillars whose numbers have been thus lessened?

Mr. ROY.—I refer to the caterpillar that attacks our apple trees.

The PRESIDENT.—That, doubtless is the forest tent caterpillar. In London some three or four years ago we had enormous quantities of those caterpillars, and we had the sparrow at the same time. But the caterpillars have since disappeared, and I am of opinion that their disappearance is not in any degree due to the sparrow, but has arisen from other causes.

Mr. P. C. DEMPSEY, (of Trenton).—My son last year destroyed several of the birds, both young and mature, in order to ascertain what they were living on, and invariably found their stomachs filled with wheat, seeds and other grains, and very few insects. I have a friend in Belleville who was a warm friend of the sparrows, who was fond of hearing them sing about his house, and who had taken me to task in a lively fashion for opposing the “poor little emigrants.” I asked him if they ever destroyed anything. “Not that I know of,” he said, although he thought there were not so many insects about his garden as formerly. “Did you ever grow any grain in your garden?” I asked. “Yes,” he said, “last year I undertook to raise some fancy millet, and before it was ripe I went to look at it and I found the sparrows playing around it, and the result was that there was not a seed left.” If that is the general experience as to the sparrow, I think we could easily dispense with him.

Mr. WM. HENDRY (of Berlin).—I live a short distance from town, and I have seen these little creatures (the sparrows) scattered all along the road; in fact, the difficulty with them seems to be that they remain too much on the streets, instead of being in our orchards gathering up grubs and insects. I constructed some boxes under my kitchen eaves for the purpose of inducing them to come among the trees. Since then they have been more numerous about me, and I have been observing their habits to see whether they do good or harm. It appears to me that while feeding their young they gather a considerable quantity of insects; I think they feed their young almost entirely on insects; but after their young ones are able to take care of themselves, it strikes me that they feed on what they can pick up on the streets rather than on the trees of our gardens. I have watched to see if they eat buds, but my impression is that they do not. I have detected them, however, picking off the little ring of eggs laid by the tent caterpillar, and I have not discovered any other kind of bird eating these eggs.

The PRESIDENT.—You are sure it was the sparrow that ate the eggs?

Mr. HENDRY.—I saw that myself. After driving the sparrows off, I have noticed that about half the ring of eggs was gone, and a day or two afterwards the rest was gone, and I concluded that the bird had come back and eaten it. I am satisfied that the sparrows are useful for destroying insects that injure our trees, and I should certainly at present vote against any movement to do away with them. At the same time, there are other birds which are very useful to us. For instance, our own red-faced sparrow, a little grey bird with a red face, I am satisfied is even more useful than the English sparrow. The robin is also a very useful bird. The only fault I have to find with the sparrow is that it is too much on the streets and not enough in the orchards. (Laughter and applause.)

MR. JAMES GOLDIE (of Guelph).—I was talking with Mr. Gilchrist a few days ago, and he mentioned the same circumstance that Mr. Hendry has, as to the sparrows eating those rings of eggs. He thought they were eating the fruit buds, but on driving them away he noticed that while the eggs of the caterpillars were gone, none of the buds were touched. I do not know how it comes that such a cry has been raised against the sparrows. If they were doing the amount of damage some contend, I do not think there would be so much trouble in our agreeing upon some just cause of complaint against them. There are hundreds of sparrows in my grounds summer and winter, and I have never known them to touch a fruit bud or to eat any small fruits; and as for eating the millet seed that Mr. Dempsey spoke of, there is not one of our native sparrows but will do the same thing. I have grown millet before the sparrows came, and I found that it was difficult to save it from our native birds. I have noticed the sparrows acting the part of fly catchers in chasing moths and capturing them. My opinion of them is that while they are of no particular injury to the country at large, they are quite useful for destroying injurious insects.

MR. P. E. BUCKE (of Ottawa).—There are two or three small fruit-growers in Ottawa who say they will contract to feed through the winter any considerable number of sparrows that any gentleman may send down to us, in order to have them in the spring. During the past two years they have not found it necessary to apply any paris green to their bushes owing to the sparrows having eaten the bugs. I cannot speak authoritatively as to the merits or demerits of the sparrows, as I have not many about me. The complaint of one gentleman, whose opinion I sought with reference to them, was that they twittered so loudly about his windows in the morning that he was unable to sleep. I think the sparrow is at least as good a bird as the robin. In the spring at any rate, the sparrows are useful, but when the seeds and grains get ripe, they rather prefer them to worms and insects. They attack these in order to carry them to their nests as food for their young.

MR. C. R. GEDDES (of Berlin).—I have no doubt at all that the sparrows do destroy a great number of insects and caterpillars of various kinds. I have myself seen them destroying the rings of eggs on the branches. There is no doubt that they sometimes eat grain as our native sparrows do. We have some destructive birds in our own country, and I think the "little emigrant" is sometimes blamed for injury done by them. My opinion is that they ought to be encouraged. They may eat a few grains of wheat, but not as long as they can get insects. When I was a boy, I destroyed hundreds of them in England, like other boys; I used to shoot them and dress them, and I seldom found in their stomachs more than a grain or two of wheat. I have seen the sparrows destroying pea bugs as fast as they would show themselves.

MR. J. M. DENTON (of London).—I have watched the sparrows with a great deal more interest during the past year than at any time before. In England I always looked on them as a nuisance; but their song has a charm for me, even though it is early in the morning, because it reminds me of my boyhood. I have often watched them catching millers among the grass on my lawn.

THE PRESIDENT.—The evidence I have been able to collect regarding the sparrow is quite contrary to most of what has been expressed to day. My son who takes great interest in ornithology has examined the stomach of one or two hundred of these birds, young and old, and judging by what I have seen taken out of their stomachs, I think the amount of insect food they eat is very small, compared with the proportion of grain. I do not think the quantity of grain they consume is a matter of great loss as yet, since it consists chiefly of street pickings; but as for their destroying insect pests, the experience gained about London is decidedly unfavourable. We have seen in some papers, including the *Horticulturist*, reflections on people who assert that the sparrows eat fruit buds on our trees; but, unfortunately, it is a fact that they will eat buds; we have had some trees stripped by them of every bud. There are two sides to this question. It is quite true that the sparrows when feeding their young, do destroy a great many insects; but I am not disposed to give the sparrow all the credit for the disappearance in some years of insects which were formerly a great pest to us. Sometimes we find that a particular insect which for a number of years has been very abundant, suddenly and



without any apparent cause, becomes very scarce, and continues so for several years following. So far as I have been able to ascertain, these changes are brought about, not by birds, but by parasite insects, which feed upon them. If you take the trouble to rear a few caterpillars, you will find that five out of every six of them will produce not moths, but flies which feed upon and destroy them. I was in Ottawa a few weeks ago, when there was a great outcry about the ravages of the army worm. I went on a search for specimens, in company with two gentlemen who were very much interested in the matter, and we found that these worms were very abundant in the clover fields and very destructive to the clover. As we were collecting the worms, we noticed quite a number of them lying dead and rotting on blades of grass. These had been attacked by a species of fungus, which was destroying them just as epidemics sometimes do the higher races. I collected over a hundred of these worms, put them in boxes, and brought them home. The disease which was destroying them in the fields spread so rapidly among those collected that I failed to preserve a single specimen. I mention this circumstance to show that it is not safe to attribute every disappearance of insect pests to the birds, for there are other causes. I have no wish to disparage the birds; I am glad to learn that they eat the egg clusters of the tent caterpillar; that is one feather in their cap which I will not forget. I hope they will continue to work in that direction, and that the sparrows which have acquired this habit will be disseminated throughout the country wherever the tent caterpillar prevails.

Mr. BUCKE.—I would like to ask whether the stomach of the sparrow would not assimilate insect food more quickly than it would buds, and whether on that account the traces of insects in the stomach may not have escaped detection.

The PRESIDENT.—Of course the larvae of the insects would disappear very much more quickly; but the head and skin are hard and horny, and are not easily digested, so that one can always by this means trace in the stomachs of the birds the insects they have fed on, and in what proportion. I would urge on the members of this association, those especially who are strongly impressed with the usefulness of the sparrow, to test their views by the very simple and practical method of occasionally having a sparrow pie for breakfast, and examining the stomachs of the birds so disposed of. The sparrows multiply so fast that I do not suppose anyone will feel many scruples about shooting a few occasionally. This is the most practical way of deciding the amount of good they are doing. It is impossible to tell by watching them, even in the case of the tent caterpillar, it is possible that the sparrow may be getting the credit for work done by some of our native birds. I do not wish to throw discredit on any testimony favourable to the sparrow, but merely to urge close observation, so that we may arrive at the truth whatever it may be.

Mr. GOLDIE.—The sparrows are noisy about our dwelling houses, and probably a little dirty in their habits. These two things, so far as I can see, are the greatest objections that can be urged against them. I do not know that they are injurious to farmers. I have not heard a single individual complain of their going into the fields to eat wheat or oats or any other grain while it is in the straw. I do not think we can point to any positive injury done by the sparrow equal to what is done by the robins and the grackles in our gardens. In my experience they are much more destructive than the sparrows.

Mr. J. H. PARKER (of Woodstock).—I feel inclined to agree with the majority of the speakers to-day in saying a word in favour of the sparrows. They only visit my grounds occasionally. I was talking the other day with Mr. Newton, a neighbour of mine, on this question. His garden adjoins a large church, in the eaves of which a great many sparrows build their nests, and he is convinced that they do a great deal more good than harm, that they destroy an immense number of insects, and he would rather have one sparrow than fifty robins. The robins are fearful robbers, and at this particular time they do a great deal of injury to the strawberries. Mr. Newton has been trying to find out whether the sparrows eat any buds, and he has observed a bird with a red poll, considerably resembling the sparrow, that is very destructive of buds, but he has not known sparrows to eat buds at all. On the whole, I think the sparrow does a great deal more good than harm.

Mr. GEO. LESLIE (of Toronto).—At the risk of being called a "sap-head" I must



oppose anything tending to increase or perpetuate the sparrow in this country. I take him to be a vegetarian in his diet nearly altogether. He has been called a "poor little emigrant." Well, I think we might properly class him as a pauper emigrant. (Laughter.) If the Government would ship him back to the country he came from, I would be very glad, and would feel like whistling the "Rogue's March" to celebrate his departure. (Applause and laughter.) I consider him an absolute nuisance in the City of Toronto. In the first place, his noise in the morning to anyone who wants rest is something abominable. I have had some experience of the sparrow. We had our house covered with the Virginia creeper, but we had to cut it down because the sparrows made their nests in it and made such a terrible racket in the morning. Their droppings are also a great nuisance. I have seen a sparrow up to his neck in a Beurre Giffard pear, something I prefer keeping for myself. I have seen them strip the plum trees entirely of their buds. I have seen an acre of oats so devoured by them that I could not find a dozen grains in passing through it. That was on Mr. Hill's farm, a few miles from Toronto. I think the damage the sparrow does greatly overbalances the good, and the sooner we get rid of him the better.

Mr. JOHN CROIL (of Aultsville).—It is a pity that the "little emigrant" should be blamed for rousing us up in the morning. I agree with what has been expressed, that the blackbird and the robin, especially the blackbird, are doing us a great deal more harm than the sparrow.

Mr. H. L. JANZEN (of Berlin).—I have not noticed the sparrows about my place except in the neighbourhood of the barn, where I have seen them picking up grain. They have not yet done me any harm. I know that blackbirds and robins are very destructive to strawberries, raspberries, cherries, and other small fruits.

The PRESIDENT.—The question appears to me to largely resolve itself into one of numbers. In Toronto and London they are very abundant. When they were scarce we thought a great deal of the sparrows, but they multiply to such an extent that they have driven from our gardens almost all the other birds. Even the robin can hardly find a resting place where the sparrows are abundant. This summer the sparrows have followed the robins up to such an extent that we have not a robin's nest about our garden. As long as you have only a few sparrows about Berlin, you may be favourable to them; but when you come to have them chirping in thousands about you, especially at four o'clock in the morning when you want to sleep, I am afraid you will not admire the music any more than I do. I hope, however, as we have them amongst us, that they will prove more useful than we now believe them to be. In the meantime, let us collect all the information we can by observation and study of their habits.

### QUESTION DRAWER.

QUESTION.—By Mr. A. A. WRIGHT (of Renfrew).—Would a plant, placed close to the south of a wall, be materially hastened in growth by painting the wall; if so, what colour should the wall be painted, and why?

Mr. DEMPSEY.—A few years ago we had a couple of very nice cherry trees in front of my house, and we changed the colour of the house from brown to white. Before the change the trees had been flourishing and producing crops of fruit annually; they only lasted about two months after we painted the house white. I would advise you never to paint your walls white, as the reflection of the heat from the wall would destroy the foliage of the plant at all events if it be a cherry tree; I presume the case would be the same with other plants. The trees I speak of were about fifteen feet from the painted surface of the house.

Mr. WRIGHT.—What would the effect be in the case of rhubarb or some other vegetable?

Mr. DEMPSEY.—I have not had much experience with that particular plant; but almost invariably plants prefer a position in front of a dark coloured stone wall or an unpainted fence. In front of a glass structure, for instance, we find that plants flourish admirably, but any substance that tends to reflect the rays of the sun is injurious.

Mr. PARKER.—According to that theory, a lean-to vinery against a wall painted white would not be successful.

Mr. DEMPSEY.—I have had some experience of a lean-to vinery with a white wall at the back. In a very short time the foliage so shades the house that very little sunshine strikes the wall.

Mr. CROIL.—Some years ago I had a number of vines planted against a wall fourteen feet high that had been plastered and whitewashed, and the vines were so badly burned up that in the fall there was not a leaf left. So I consider the white wall injurious. As long as the glass was over the plants, and they were syringed daily, they were all right, but if exposed to the open air they were destroyed.

Mr. BEADLE.—I cannot say much from personal experience on this subject; but if I lived where Mr. Wright does, and wanted to hasten the growth of a plant by giving it more heat than it would derive from the direct rays of the sun, I would plant it at a little distance from the wall, so that the sunlight would strike the wall as well as the foliage of the plant; and I would paint the wall a dead black, so that it would absorb the heat of the sun in the daytime and give it out at night, producing a more uniform heat about the plant. In that way I think you would succeed in bringing the plant and fruit more rapidly to maturity, partly on account of the shelter from the wind afforded by the wall, and partly from the diffusion of heat at night from the surface of the black wall.

Mr. DEMPSEY.—Just one idea more. I have noticed that if the lean-to has a very steep roof, the rays of the sun will be thrown directly against the back wall, whence it will be reflected. I have seen the best results from flat roofs, the flatter the better; and the plant should invariably be got as near the glass as possible.

#### PROPAGATION OF CURRANTS.

QUESTION.—By Mr. CROIL.—Can currants be propagated from single eyes?

Mr. BEADLE.—Mr. Croil wrote to me some time ago asking this question, and I suggested to him to ask it here. Since that time I have been in Mr. Lewis' propagating house in Lockport. Chase Brothers had imported a plant from England at considerable expense, and they gave him some of the wood—in fact had just cut the tops off their currants—and asked him to propagate it, and to make as many plants as he could. He cut it all up into single eyes, and these he set out. They started very nicely, but when I saw them they were dying off at a terrific rate. Mr. Lewis told me he did not think he would save a single one. I examined the buds, and I told him, “you have what we call the bench fungus here;” and I think that was the real trouble that was causing the destruction of his currant buds. Why they should not grow from single eyes as well as from four or five eyes I do not know.

Mr. CROIL.—I had one plant of Fay's Prolific, and obtained two more; and I wrote stating that I wanted to propagate it as fast as I could, and asking if I could propagate it in that way. You suggested that I should plant them according to the old plan, and I cut them up, not into single eyes, but into slips with two or three eyes each; but one single eye I did plant, I planted them in six or seven inch pots, and put them in the hot bed. They all grew, with the exception of the single eye, and they are to-day from four to eight inches high and thriving well. I have since put them in the ground without disturbing the pots, and I have now thirty plants.

Mr. R. C. GEDDES (of Berlin).—I have had some experience of this one bud system. Two years ago I bought a bush of Fay's Prolific, for which I paid a dollar. It was, I thought, a small miserable looking thing, and upon examining it, I thought I would dissect it and make what I could out of it. So I cut it up into single buds, taking a good piece of wood with each, and inserted them in the propagating ledge. They grew most luxuriantly the first year. I afterwards put them in the beds in the cold-house, and this summer I sold some, and the rest I put in the garden, where they are growing very thriftily. Those were all from single buds, and I did not lose one.

The PRESIDENT.—Did you bury the buds under the sand?

Mr. GEDDES.—I just placed them on the top of the sand and pressed them in tight, and left the eye peeping above the surface.

Mr. LESLIE.—I have had some experience in growing currants from single eyes, and have had no difficulty as yet. My plan is to cut the bushes up into single eyes, and plant them with the eye on top, and the slant below. I first place them for three weeks in the greenhouse, and afterwards put them in boxes, leaving the eye just even with the top of the sand. In that way I have grown red, black and white currants without any trouble.

Mr. HENDRY.—I did not understand whether Mr. Geddes cut the stem off the whole piece, or whether he sliced it in such a manner as to retain a piece with each bud. I think it is important to know the form, because it might not grow in one form when it would in another.

Mr. GEDDES.—I take a liberal chip with each bud.

Mr. HENDRY.—You split the stem, and leave the bud with about half the stem

Mr. GEDDES.—Yes.

Mr. LESLIE.—I do not split the stem, but make a considerable slant underneath the bud, so that in planting the bud will be even with the top of the sand.

QUESTION.—By Mr. JANZEN.—How can we destroy the worms that are now attacking the foliage on the red and black raspberries!

Mr. BEADLE.—Will someone tell us what kind of a looking worm it is?

Mr. JANZEN.—It is a caterpillar, not exactly what we call the currant worm, but softer and slimmer, and not quite so thick or long as the ordinary caterpillar. It is literally stripping my plants. I have sprinkled them with white hellebore, which has killed some of the worms, but some still remain. If left to go on in their own way, they will soon completely destroy our raspberries.

The PRESIDENT.—The insect referred to is the raspberry saw-fly, which is very easily destroyed by the use of hellebore and water, or, if a stronger dose is required, with Paris green. I have never found any difficulty in destroying them with hellebore and water.

Mr. A. M. SMITH (of St. Catharines).—They have been very bad with me. I did not notice them until the raspberries were in blossom, and I have wondered whether there was any danger in using hellebore after the fruit was set.

The PRESIDENT.—None whatever. The insect almost exactly resembles the colour of the leaf so that it is very difficult to see it; but if you look closely, you will find it, and you need have no difficulty in getting rid of it in the way I mention. It is perfectly safe to use hellebore; in fact, I have no hesitation in using Paris green, even after the fruit has set, and eating the fruit afterwards, as the rains soon wash off the last traces of it.

#### FAY'S PROLIFIC *vs.* MOORE'S RUBY.

QUESTION.—By Mr. BUCKE.—Which is the best currant, Fay's Prolific or Moore's Ruby?

The PRESIDENT.—I think Messrs. Stone and Wellington are the parties who are propagating Moore's Ruby. I was asking Mr. Morris about it, and his experience of it was such as would warrant one in hoping that it might have a more extended cultivation. He seemed to prefer it to Fay's Prolific.

Mr. WRIGHT.—I have never had the plant until this year, but it appears to be thriving. As to the quality or size of the fruit I cannot speak.

The PRESIDENT.—Mr. Morris claimed that it was very much superior in quality to Fay's Prolific. While Fay's Prolific is large, it is not much superior to the ordinary cherry in quality. Mr. Morris cited Mr. Barry's statement at a meeting in Rochester in favour of its fine flavour, which he said was superior to that of any other red currant.

#### THE THRIP.

QUESTION.—By Mr. GOLDIE.—What is the best way to destroy the thrip, or to keep it off roses and grape vines?

Mr. THOS. BEALL, (of Lindsay).—My experience is that of my wife. A few weeks ago she adopted a plan of destroying the thrip on our vines in the vinery, and also on two or three vines on the south side of the house, along a brick wall. Her plan was to hold a



pan of water under the vines in the evening, when the thrips were congregated on the underside of the leaves, and knock the leaves on the top, so that the thrips would fall into the water. At first I laughed at her, because I thought it was a very tedious operation. The next morning she called my attention to a wash-tub of water standing at the back door. There were thousands of little grey insects on the top of the water. They were thrips, but they were alive. However, the next night she repeated the operation, using hot water, and this time she did not get half the number, but they were dead. She proceeded thus for two or three nights following, each time getting fewer thrips than before, and since then we have hardly been able to find a thrip in the whole place. It is possible that we may yet have another crop; but, if effectual, the plan I mention will well repay the trouble.

Mr. A. M. SMITH.—I have a little second-hand experience also. My wife, too, had a little fight with the thrips. She had a choice rose bush attacked with the thrips, and she threw under it some tobacco leaves and other rubbish, and then covered it with a sheet, and gave it a thorough smoking. The thrips did not appear to be fond of tobacco, and she cleaned them out in that manner.

Mr. BEALL.—Mrs. Beall has followed the same operation with her rose bushes for several years, and it is a very easy one. But it is not so easy to cover a grape vine in that way.

Mr. F. MITCHELL (of Innerkip).—I have had considerable experience with the rose thrips, as I grow a number of roses, and I find that the most important precaution in dealing with the thrip is to begin in time. We generally use whale oil soap-suds, or if we can't get that, some other kind, and sprinkle it on the underside of the leaves. Although there are plenty of thrips in our garden this year, even the black currant bushes being covered with them, our rose leaves are clean and untouched. We use nothing but soap-suds, but the main thing is to begin in time. Get the smell of soap-suds about the bushes, and they do not seem to care to attack them at all.

Mr. T. H. PARKER (of Woodstock).—My experience with tobacco smoke has not been very successful. I was very much troubled with thrip in my vinery two or three years ago, and I used to close it up and fill it with smoke. A day or two after smoking it, on going into the vinery in the morning, I would find the vines covered with thrips, but still alive, and when the sun came out they would recover and be as bad as ever. To destroy the thrips on my rose bushes I applied soap-suds made of soft soap, tobacco-water, hellebore, and a little Paris green. I told a neighbour I was using that, and he said, "The only other thing you need is a gatling gun." However, the mixture effectually destroyed the thrip.

Mr. GOLDIE.—I have been told that kerosene oil mixed with alcohol and water is very effective.

The PRESIDENT.—Kerosene oil is generally first mixed with milk by vigorous shaking for a long time, and then it can be mixed with water, and this emulsion can be used without any danger of the oil separating from the water. Mr. Mitchell, I think, has given us the secret of getting rid of the thrip when he says we should begin in time. When in the larval state, the bodies of the thrip are very soft, but as they grow older they develop wings which are very hard and horny. When full grown, tobacco smoke has very little effect upon them; but if taken in time, when they are soft, either tobacco smoke, kerosene oil emulsion, or alkaline washes, will destroy them.

Mr. DEMPSEY.—We have been very successful in the cultivation of roses for a number of years past by growing them convenient to where the women do their washing, so that every washing day the ground about them becomes partially saturated by suds. For ten years I have never known one of those bushes to be injured by thrips. Still, we are occasionally troubled with thrips elsewhere, which we are always able to destroy by sprinkling the bushes with hellebore or Paris green. But if you grow your roses where the washing is done, the soap-suds will not only destroy the thrips but aid the growth of the roses.

The PRESIDENT.—While we are on the subject of roses, I may remark that I notice that the roses in this vicinity are suffering very much from the rose slug or saw-fly. This is easily got rid of by the use of hellebore and water.

## BLACK KNOT.

The subject of "Black Knot on Plum and Cherry Trees" was then announced for discussion.

Mr. A. ROY (of Berlin).—The only way of dealing with Black Knot that I can suggest is to cut it out and burn it.

Mr. JANZEN.—It has destroyed a great many of our plum trees in this locality and has attacked the cherry trees also and nearly killed them out. There may be some gentlemen here who can enlighten us as to the cause of the black knot. As for getting rid of it, I think that all we can do is to cut off the branches affected and burn them as soon as it is discovered.

Mr. BEADLE.—We have had a good deal of experience with black knot on plum trees; with us it has not spread to the cherry trees. After all my experience, which extends now over a good many years, I do not know much about it. It will keep coming whatever we do. I have whittled away at the plum trees until I have whittled them down to the ground, and then the black knot was gone, but so was the plum tree. But for nearly ten years past the black knot has almost disappeared from our locality. It killed off the race of blue plum trees which existed twenty years ago, and since then a new race of plum trees has been planted which is thriving and shows very little sign of black knot. How long this happy state of things will last I do not know, but I suppose we must expect another epidemic some time. I think the truth of the matter is, we do not know what causes the black knot. We do know that we sometimes succeed in arresting its progress by watching the trees carefully, and cutting off the black knot and burning it, and some have suggested washing the wound with chloride of lime after the black knot is cut away. I think I have prevented a tree from being utterly ruined by watchfulness and by cutting off the black knot when it is green. It is not black at first, but a mere swelling of the bark causing it sometimes to crack a little. I know of no remedy to suggest but watchfulness and cutting.

Mr. BUCKE.—Until lately I never saw such a thing as black knot in the Ottawa Valley. Last year, however, I got some small plum trees from Mr. Dempsey at Trenton, and some from Owen Sound, and black knot broke out on both sets, which was the first I ever saw of this pest in Ottawa. I carefully removed it, and I am watching these trees to see if black knot will live there.

The PRESIDENT.—Anyone having the reports of the Guelph Agricultural College will find in the report of two years ago, I think, a very full account by Professor McMurrich of the fungus that produces black knot. It has been known for many years that it is produced by the spores of a particular fungus, which mature in July and are then scattered through the air. In certain sections the trees seem to be predisposed to this black knot, and it becomes epidemic like other epidemics in vegetable and animal life, and then it seems a very difficult thing to cope with. In my own garden I was never troubled with black knot until two years ago; and although I cut it out whenever it appears, it keeps coming continually, and there seems to be no end to it. I do not know why it should be more prevalent in one season than another except that the conditions may be more favourable to the growth of this particular fungus, which is equivalent to saying that we do not know much about it. The only remedy seems to be to cut the diseased parts out, and apply a wash made by boiling sulphur and lime together with water to the limbs affected, which is said to check the spread of the fungus.

Mr. D. McDOUGALL (of Berlin).—Black knot prevails greatly in this country. A gentleman in town here has tried the experiment of boring a hole in one of his cherry trees, and filling it up with sulphur. I do not know yet what the result will be. I think it would be well to have it made known generally that it is the duty of municipalities to appoint inspectors to check the spread of this disease.

Mr. CROIL.—I can tell you something about the experiment of inserting sulphur into the trees. I tried it some years ago. I bored a three-quarter inch hole in about fifty trees, and filled the hole with sulphur. They looked so well that I went on and treated a hundred trees in the same way. That, however, I now take to be a very unsatisfactory way of fighting the black knot; for that sulphur lies there to this day, owing to the fact



that sulphur is insoluble in water. Anyone who wants sulphur can get a quantity of it in my trees. (Laughter.)

Mr. DEMPSEY.—As long ago as 1848 I tried this sulphur remedy to cure black knot so that it is not a new idea by any means; and I have never seen any evidence favourable to the prevention of black knot by sulphur. Since that time, we thought ourselves perfectly free from black knot in our section of the country, but it always came again, and now we are engaged in exterminating our trees for the second time in my experience. We are just cutting the trees away and burning them up, and we hope in a few years more to be able to begin to grow some plums and cherries again. I believe that is the remedy we shall be compelled to resort to every ten or fifteen or twenty years.

Mr. H. BODWELL (of Ingersoll).—If black knot is a fungus growth, how is it that at a certain season of the year we find a small worm in the heart of the knot?

The PRESIDENT.—The reason of that is that the larva of the plum curculio is able to live in this black knot. The curculio deposits its eggs in black knot, both on the cherry and the plum tree. You will almost always find one larva of the curculio in each black knot, where it feeds on the material of which this fungus is composed. It does not originate the fungus in any way. The sulphur remedy referred to is a very old one; it has been going the rounds of the press for nearly forty years. Sulphur is not soluble in water, nor in the sap of a tree, and it only acts on fungi when it is converted into sulphurous acid by the action of the oxygen of the air, so that if you insert it in a tree and plug up the hole, it simply remains there. It does no particular harm to the tree any more than a nail or an iron spike, but nothing can be said in favour of either as a remedy for black knot.

Mr. HENDRY.—I have found it difficult to believe that the cause was not in some way connected with insect life; but the explanation given by the President has relieved my mind. Until I heard that, I could not reconcile the presence of those little worms in the black knot with the statements of scientists, that it is a fungus growth. As soon as the knot begins to turn black we do not find them there, but we can see the little hole where they have gone out. If you cut into the knot in the very earliest stages, the worm is so small that it is difficult to find it. Later on, you will perceive a little red colouring matter, and as the worm grows the red colouring matter increases, and finally a little hole shows that the worm has escaped. So far as my trees are concerned, one-half of them grow in my grass plot, and one-half in my garden where the ground is well tilled and is a very rich, strong soil, and there is very little difference between them. We get as good cherries from the trees in the grass as from those in the cultivated ground, although I think there is more black knot in the former than in the latter. My own practice is to cut the black knot off, but not to cut out too much wood. If it is necessary to cut off a whole limb, I do so without any reservation, and cover the wound over with shellac. I work from the top downwards, cutting every affected limb down to the next healthy one, and under that treatment my trees are thriving. It is only by constant vigilance that black knot can be successfully coped with. The very first moment it is discovered it should be cut away and burned.

Mr. BEADLE.—Perhaps a little experiment of mine, which I tried about thirty years ago, may be of use to our friend who has just spoken. I cut off a number of young black knots which were just beginning to make their appearance on the plum trees, and put them into some glass jars, in the bottom of which I had placed five or six inches of pure lake sand, washed perfectly clean, and freed from everything likely to have life. I covered the glass jars with a very fine gauze, and watched them. Presently I saw that the little worms had come out of the black knot, had gone into the sand and made themselves a nest there. After a time they assumed their chrysalis state, and two or three weeks later they came out of the sand as live curculios. That was a demonstration that the curculios are bred in the black knots; there was no other place from which they could possibly come. I traced them into the sand, into the chrysalis state, and into the perfect insect.

The PRESIDENT.—Dr. Harris, who wrote thirty years ago on injurious insects in Massachusetts, took notice of the curculio in the black knot. Since that time many entomologists have verified his experience, and there is no reason to doubt that the larva in the



black knot is the larva of the curculio. The fact that black knot originates from a fungus is equally well demonstrated, as it has been traced from the beginning to the completion of its growth by competent observers. At first it was thought that the black knot on the plum and on the cherry tree were two distinct species, but they have since been proved to be the same fungus.

Mr. HENDRY.—It seems that there are certain times when the trees are more liable to be affected by the disease than at other times; possibly the application of some chemical to the plum and cherry trees would prevent them from receiving the spores into the wood.

The PRESIDENT.—The thought expressed by Mr. Hendry is worth considering. I would suggest that sulphur and lime boiled together in water, and the liquid mixed with soap, would likely be a useful solution. And if some trees were painted with that, and some adjacent trees left unpainted, we might perhaps reach some useful conclusions. I would suggest that this experiment be tried during September and October. The spores mature most commonly in June and July, attach themselves to the bark of the trees, take root and remain dormant until the following spring, when they come out in their full strength. The solution I mention might deprive the spores of their vitality.

Mr. PARKER.—I believe there is a law for the destruction of this black knot. It is a pity the municipalities do not take advantage of that law. This association might do a great deal of good by stirring up the authorities to see that the act is carried out and proper inspectors appointed.

Mr. A. M. SMITH.—The old laws relating to the Canada thistle, to black knot on plum trees, and to the yellows on peach trees, have all been repealed, and a new law has been passed, authorizing the appointment of an inspector in each township to attend to all these matters. On the application of a certain number of ratepayers, the council is obliged to appoint an inspector.

#### COMMITTEE ON FRUITS.

The following gentlemen were appointed a Committee to examine the fruits on exhibition, and to report to-morrow:—Messrs. John Little, of Fish Creek, Geo. Leslie, of Toronto, and Frederick Moyer, of Berlin.

The Association then at 12.30, adjourned to three o'clock.

#### WHY TREES FAIL TO FRUIT.

On resuming, the following question was taken up: "Why do healthy and thrifty trees that blossom abundantly fail to set their fruit?"

Mr. GEDDES.—This subject was suggested by me, and I am anxious to have some light upon it. I have certain trees ten or fifteen years of age which are growing magnificently, and blossom every alternate year as abundantly as one could wish, but they never carry more than perhaps a dozen of fruit, and these generally fail before maturity. What the reason is I cannot tell. I have other trees in the same field that produce abundantly.

Mr. BUCKE.—The same variety?

Mr. GEDDES.—No.

The PRESIDENT.—What variety is it that fails to set its fruit?

Mr. GEDDES.—The Colvert apple.

Mr. HICKLING.—I have had trees that acted in the same way for several years, but I attributed it more to the cultivation of the soil than to the particular fruit.

The PRESIDENT.—Was it that you cultivated them too much?

Mr. HICKLING.—No, not enough. The same varieties that were cultivated bore fruit.

Mr. SIMON ROY (of Berlin).—The rains destroyed the blossoms. I have had similar experience with plum trees. Those that blossomed early bore an abundant crop of fruit. Those that blossomed later failed simply because the rain destroyed the blossoms.

Mr. BEADLE.—It is largely a matter of supposition, because it is difficult for one who has not seen the trees and knows all the circumstances, to say why they have not borne

fruit. Here is one fact regarding the Colvert apple tree—it is a very free-growing tree naturally, but until it acquires some age and size it does not bear well, but after it begins to bear, it is a profuse bearer. If the difficulty were a late frost, or a rainstorm destroying the pollen, other trees in the same neighbourhood would likely be affected, and if the trees mentioned stand alone in this peculiarity, I suppose it must be because they have grown more thriftily than others.

Mr. BUCKE.—I think the Secretary has struck the key-note of the trouble. I had some seedling plums that grew thriftily, and blossomed fully, but bore no fruit. By digging about the trees I slackened their growth of wood and they afterwards bore well. Sometimes it is the rank growth of the trees that prevents their setting their fruit.

Mr. HENDRY.—The difficulty is one which, I presume, we have all to some extent experienced. The only explanation of it that I have been able to form in my own mind is that when the pollen is at a certain stage, if a shower of rain or a frost comes, it injures or washes away the pollen and lessens the chance of fertilization.

Mr. DEMPSEY.—A too vigorous growth I find generally prevents blossoming; but I have seen a great many trees that did blossom well fail to produce fruit, owing to some defect either in the pistil or the pollen. A shower of rain will sometimes deprive the pollen of its fertilizing power, or a very dry wind will in a short time so dry up the pistil that the pollen will not adhere to it. If you observe closely, you will perceive at the terminus of the pistil of every flower a sticky substance like honey which causes the pollen to adhere, and if that once dries away, the fructification fails. In artificial fructification, we sometimes use a drop of honey to cause the pollen to adhere to the pistil. I presume, therefore, that either wind, rain, a cold atmosphere, or a little frost, will sometimes so injure the flowers as to fully account for lack of fertility.

The PRESIDENT.—A great deal depends upon another element that has not yet been mentioned, that is, the presence of insects. If the weather is fine during that particular period when the fruit is ready for fertilization, so that flies and other insects are able to fly about from flower to flower, the chances of fruitfulness are very much increased. I do not think it often happens that fertilization takes place by the pollen being blown on the stigma, but that more generally the pollen is conveyed to the female organs by means of insects carrying it from blossom to blossom on their legs and wings. Hence the importance of fine weather during the blooming period, and the fatal effect of wet weather, on fertilization, no matter how abundant the blossoms may be. The pollen does not mature at the same time on all flowers. Some anthers will be ready to shed their pollen a day or two before others. Hence fertilization does not depend on one or two or three days. If it did, we should have failures much more often than we do now. But extending, as it generally does, over a week, we usually receive during that week at least some weather favourable to the fertilization of the blossoms.

## QUESTION DRAWER.

### APPLES FOR THE ENGLISH MARKET.

QUESTION.—By Mr. THOMAS BEALL.—A person who has a sufficiency of apples for his family use and also for his local market, is about to set out an orchard of ten acres, the fruit being intended for the English market. What varieties, and what number of varieties would you recommend?

Mr. A. McD. ALLAN (of Goderich).—On this subject I can only speak with reference to my own section of country. I do not know exactly what varieties will grow successfully in the Lindsay district. For actual profit I consider the Baldwin and the American Golden Russet the two best varieties. I would not advise a person planting an orchard of the size mentioned, or in fact of any size, to set out many varieties. The greatest profit, I think, is found in confining one's self to two or three well tried varieties.

Mr. A. M. SMITH.—I would recommend the same varieties as Mr. Allan, wherever they will succeed.

Mr. BUCKE.—The American Golden Russet proves to be quite hardy near Ottawa and I fancy it would be equally suitable for Mr. Beall's part of the country.

Mr. BEALL.—The Golden Russets are nearly all hardy in my district. My principal object, however, in propounding this question is to endeavour to have impressed upon the minds of all fruit-growers that it is a mistake to attempt to grow a large number of varieties. What we require to do is to ascertain the best two varieties for any particular locality, and, when we are growing for profit, to restrict ourselves to those. I suppose it is scarcely possible to name any two varieties which are suitable for every part of the province; but the Association should urge upon fruit-growers the importance of limiting themselves strictly to those which have stood the test of experience.

Mr. A. ROY (of Berlin).—The Ribston Pippin and the Rhode Island Greening are the apples I have been shipping to England for the past half-a-dozen years, and they have always been well received. The Ribston Pippin is a remarkable bearer, too, and it should not be overlooked.

Mr. GEO. LESLIE.—I think it must be patent to everybody that very few varieties ought to be grown for the English market. One variety I have shipped is the Blue Pearmain. It is really a good apple, but it is not of first quality. The Ribston Pippin also does well; people say that it grows much more successfully in Canada than in England. The Baldwin and the Golden Russet are both first-class, and have taken a good hold of the market. The Greening does not appear to have met with much favour yet. An apple that I think will make a good place for itself is the Colvert. When shipped it has usually commanded a good price.

Mr. A. M. SMITH.—My experience of the Blue Pearmain is altogether different from Mr. Leslie's. It is not worth growing around Grimsby.

Mr. LESLIE.—I picked eight barrels off one tree. It has been planted twenty years.

Mr. A. M. SMITH.—I know large spreading trees which have been planted thirty years that do not produce a barrel.

Mr. DEMPSEY.—Where the Ben Davis will grow successfully it is superior to any other variety, because it will produce more barrels to the tree than any other. If the tree is thinned out and properly cared for, it will set an enormous quantity of fruit. Even in the New York market last year the Ben Davis brought a dollar a barrel more than any other apple. The Golden Russet with us is a good, hardy apple, as is also the Ben Davis. The varieties to which I would give my preference are the Ben Davis, the Colvert, the King of Tompkins County, and the Golden Russet. We also find the Red Canada to be a good grower and perfectly hardy, and it brings high prices in England.

Mr. BUCKE.—How are you going to thin out the apples on the Ben Davis trees?

Mr. DEMPSEY.—You can do it with a club if you like, but I can assure you it will pay you to thin them, even if you have to send boys around with ladders to cut the apples out.

Mr. BEALL.—I would like to ask Mr. Dempsey, if a friend of his were going to set out an orchard, whether he would recommend him to plant the whole five varieties he has named, as a matter of profit.

Mr. DEMPSEY.—In our section of country the five that I speak of are succeeding admirably. The best results from any I have seen are from the Colvert. A brother of mine two years ago got \$500 an acre for Colverts. The trees of this variety bear right along, and the apples, when shipped to the old country, command a very high price.

Mr. ALLAN.—Did you obtain as good a price last year for the Ben Davis as in former years?

Mr. DEMPSEY.—With the exception of a barrel of Northern Spies, I had not an apple last year that was fit to ship anywhere.

Mr. ALLAN.—Last year my experience with the Ben Davis was that it went down in price. The people in the old country are beginning to dislike its quality.

Mr. BEADLE.—I wish to say a word for the Ribston Pippin. I believe there is as much money in that as in any other variety we have for the English market, in localities where it will grow and bear well. It is apt to begin bearing when it is quite young, which tends to retard growth and to diminish the size of the tree. Well, you can overcome that difficulty by planting the trees a little thicker than is usually the case with some other varieties which naturally grow large; but from all I know of that apple, it will sell in the English market next to the Newtown Pippin, if not equally well. Gentle-



men in my neighbourhood who have shipped them to England, have there obtained for them from \$12 to \$15 a barrel. You must be careful to pick them a little on the green side, and ship them by fast steamer, and when they reach the market they will be in prime condition, and will sell "like hot cakes." Another fact not to be forgotten is that our Ribston Pippins will beat anything of the kind that can be grown in Britain.

Mr. DEMPSEY.—The Ribston Pippin is perfectly hardy with us, but the largest quantity of fruit I have gathered from a Ribston Pippin planted twenty years was a barrel and a-half, and the best I have got from a Baldwin planted twenty years was twelve barrels, so you can just compare the profits. There is more money in the Baldwins at a dollar a barrel.

Mr. GEDDES.—Might not the success of the Ribston Pippin depend upon the character of the land—whether it was high land or low land? I have seen Ribston Pippin trees growing on the banks of the Thames in England, that were fairly breaking down under their load of fruit; but here I cannot grow them—my land is high and dry—and that is what leads me to ask this question.

Mr. BEADLE.—If they do not grow, that is a misfortune of this locality and of Mr. Dempsey's locality. In my section they bear so heavily that the branches have to be propped up.

Mr. LESLIE.—In my locality it is a first-class bearer, and the fruit is splendid. We have trees planted twenty-five years that frequently produce five or six barrels each.

Mr. BEADLE.—If you have a tree from which you can pick five barrels that bring \$10 a barrel, you will make more money than if you had a tree that yielded twenty-five barrels which only brought a dollar a barrel.

The PRESIDENT.—It is evident from this discussion that the best policy for those looking to the English market is to confine themselves to one or two varieties that succeed best in their own neighbourhood.

#### THE BEST FERTILIZERS FOR RASPBERRIES.

QUESTION.—By Mr. H. BODWELL (of Ingersoll).—What is the best fertilizer for raspberries? Is sawdust of any benefit?

Mr. JOHN LITTLE (of Fish Creek).—I never put sawdust fresh from the mill on either strawberries or raspberries, but if you get it three or four years old, when it is well rotted, it is capital for strawberries, and I suppose it would be equally good for raspberries. But the best fertilizer for raspberries is a liberal supply of wood ashes, either leached or unleached.

Mr. S. ROY (of Berlin).—In my opinion the best fertilizer is well rotted manure. As for sawdust, it is a capital thing for mice to burrow in and to facilitate their work of destroying the trees.

Mr. GOLDIE.—Give your bushes plenty of room, and then, when you can get it, good stable manure is the thing.

Mr. LITTLE.—A word of caution here. If you manure raspberries on rich land you will get plenty of vine and leaf, but very little fruit. As for sawdust from the mill it will sour the land, and will rather be an injury than a benefit.

Mr. HENDRY.—I have always had a prejudice against sawdust, and consequently have never used it, but I apply liberally both ashes and stable manure. I put 500 bushels of unleached ashes on less than one acre of land, and that same soil has brought me one crop of the best potatoes I ever knew. My land is a strong, heavy clay, and I find the ashes to be the best fertilizer I can use. I have not used coal ashes at all. I am satisfied, from my experience, that a good coating of wood ashes one year and a good coating of stable manure the alternate year will give the best crop of raspberries we can get. I find that the heavier dose of unleached ashes I give my land the better crop I obtain.

Mr. CROIL.—What do you pay for ashes?

Mr. HENDRY.—Ten cents a bushel delivered.

Mr. HILBORN.—Is that treatment for red raspberries?

Mr. HENDRY.—Red and black—I treat them all alike.

Mr. HILBORN.—My experience is that barn yard manure is as good fertilizer as you

can use for all sorts. Wood ashes are also good. If I had to choose between them I would take the barnyard manure.

Mr. A. M. SMITH.—I would use both if I could get them. I prefer barnyard manure to ashes, but if I could not get it I would use ashes. With regard to sawdust, I think a good deal depends upon the kind of wood it is made from. Pine sawdust is not as good as that from other wood; it does not decompose rapidly. I would recommend mulching the raspberry bushes with sawdust in the fall.

Mr. WM. COPELAND (of Berlin).—What effect would sawdust have on light land? Would it not dry it too much?

Mr. A. M. SMITH.—It would be too dry if there was too much put on before it was decomposed.

Mr. CROIL.—May I ask Mr. Smith if he has used tan bark for mulching?

Mr. A. M. SMITH.—I have never tried it. I have tried chip manure and sawdust mixed together as a mulch for my raspberries, and with very good results.

Mr. DEMPSEY.—I have used leached and unleached ashes extensively, but it occurs to me that if we require 500 bushels to the acre at \$50 an acre it would be a rather expensive manure for raspberries. If we repeated that process annually we should require a very good crop to pay for it. I should rather use half a ton of bone dust, which would only cost \$20, for with this I have never failed to get a good crop; and then bone dust lasts a number of years. I prefer both bone dust and good wood ashes to stable manure, which is the most expensive manure we can use.

A MEMBER.—Where do you get the bone dust?

Mr. DEMPSEY.—We used to get it from Mr. Lamb in Toronto.

Mr. LITTLE.—If you use stable manure, unless you turn and re-turn it constantly you will have clover in it, and that we find a great disadvantage in strawberry culture.

Mr. DEMPSEY.—How much unleached ashes are required to destroy the white grubs?

Mr. LITTLE.—I would put in fifty bushels to the acre before planting, and after planting I get the young folks to go and sprinkle the ground with it everywhere.

Mr. DEMPSEY.—I have applied about 140 bushels to the acre, and have found just as many grubs afterwards as before. We have thrown the grubs in ashes to see how long they would live, and have taken them out the third day as much alive as ever.

Mr. WRIGHT.—I use unleached ashes largely, and find them an excellent manure, but I have never known them to destroy the grubs. This year the grubs have utterly ruined my onions. For clay soil, ashes is one of the finest possible manures; it converts the soil into a good workable loam.

Mr. BEADLE.—Mr. Croil asked about mulching with tanbark. I have done that with strawberries. I do not say it did any harm or any good, except to keep the sand off the berries.

Mr. CROIL.—Would you cover strawberry plants with tan bark in the winter?

Mr. BEADLE.—No, I should not expect to see them again if I did. Strawberry plants are very easily smothered. I just cover them with sufficient straw to protect them without concealing the leaves. If you do more than that you run the risk of killing the plant.

#### FRUIT TREES IN SOD.

QUESTION.—By Mr. HENDRY.—Will fruit trees thrive and bear as well in sod as in bare ground, provided an annual dressing of fertilizers be applied, the grass be kept short as in a lawn, the cuttings left on the ground, and the grass kept out around the stock?

Mr. CROIL.—A neighbor of mine, Mr. Raymond, has a very nice orchard of about 500 trees, which was planted the same year as mine. His orchard has been seeded down in grass from the commencement, while mine has never been seeded down until the last year; and these two orchards are set down as about equally good. Still, I certainly prefer having mine ploughed.

Mr. S. Y. SCHANTZ (of Berlin).—It has been my practice, when setting out a young orchard, to seed it down, mulch the trees with coarse straw manure, and keep the sod clear around the trees for two or three years. In a young apple orchard it is very important to have the trees well mulched with rough manure.

Mr. DEMPSEY.—I have a couple of pear orchards, one of which is in sod and the other cultivated. The one in sod has no fruit, while the other shows a very fair prospect. Again, I have a small apple orchard in sod and another that is cultivated. In the cultivated one I get a nice crop of raspberries every year, and the apple trees are loaded with fruit, while there is scarcely any fruit on the others. The trees in the cultivated ground make wood about twice as fast as those in the sod. I would not under any consideration listen to the idea of seeding an orchard down, except with clover, where manure is scarce, which is a very cheap way of fertilizing.

Mr. CROIL.—If you have cultivated your orchard for ten years, and your trees are planted 30 feet apart, I think you must have done a great deal of damage to the trees by ploughing among them. I had to seed down from necessity, in consequence of the injury I was doing in that way. Don't you find that an objection to cultivating your orchard?

Mr. DEMPSEY.—No.

Mr. CROIL.—Your trees must be very high.

Mr. DEMPSEY.—Four feet and a half. I can plough both ways by leaving a space about three feet square at the trunks of the trees. It is true we cut a certain number of roots.

Mr. CROIL.—I am speaking of damage to the limbs.

Mr. DEMPSEY.—A few of the limbs may be injured, but not to any great extent. We also cut some roots, but "Thomas Rivers' Fruit Guide" recommends the cutting of the roots of trees, as it makes them stronger and more prolific. He also recommends cutting a trench all around the tree every two or three years, and then fertilizing it. The year following this operation the tree will throw out an immense number of young roots. I have closely followed this system with a pear tree, regularly pinching and root-pruning it. At last I let it grow as it would. It is now about eighteen feet high. I have never seen any blight on it, and it produces a fine crop of pears every year. So I am satisfied we do not damage our trees very much by cutting some of the roots with the plough.

#### SPENT LIME AS A MANURE.

QUESTION—By Mr. J.<sup>r</sup> H. PARKER.—Of what value, if any, is spent lime from gas works, as a manure for general crops?

Mr. BEADLE.—I will give my experience of its value for the one purpose for which I have used it. I have some walks leading from my house to the gates, and in other directions, and I have covered these walks with a layer of probably half an inch of gas house lime, and put about half an inch of gravel on top, and I have never seen a weed come up there since. (Laughter.)

Mr. GOLDIE.—Some years ago I had a little experience with gas house lime, and my experience was very similar to Mr. Beadle's. If used largely it is sure to kill all vegetation that comes in contact with it; but, by mixing it with soap suds and letting it lie for six months or a year, I have found the compost to be of good value. I have sometimes used the liquid that comes from the gas works, but in that I could not see much value.

Mr. PARKER.—The reason I ask that question is that in many places it is used as a manure, and, when composted, is said to be a very valuable manure, while in other cases it is said to be of no value at all. I am connected with the gas works in my town, and we have been selling the lime at a dollar a ton. One farmer took a large quantity of it, hauling it ten miles. One day his son was in, and I asked him what effect it had. He said, "If you like to come and see our farm, and compare it with our neighbours' farms, you will see the effect. It is altogether ahead of any other farm in the neighbourhood." There is very little doubt that the lime is valuable, if composted, allowed to lie for a year, and used sparingly. But if too much is applied, like salt, it is injurious.

The PRESIDENT.—The usefulness of gas lime depends very much on the quality of the coal from which the gas is made. The object in allowing the lime to stand for a long period before using it, is to free it from the sulphur which is united with it. The sulphur and lime united make just such a compound as is recommended to be applied to apple trees to destroy the grub. The sulphur being volatile, is slowly eliminated, and then you



have remaining the lime, which is a very valuable manure. I should think that the liquid from the gas works, which contains ammonia, would show better results than Mr. Goldie has stated.

Mr. GOLDIE.—I did not use much.

The PRESIDENT.—Nearly all the sulphate of ammonia used now is obtained from the gas liquors. It is a very valuable manure.

#### COAL ASHES AS A MANURE.

QUESTION—By Mr. C. R. GEDDES.—Is there any value in coal ashes as a manure?

Mr. BEADLE.—I have tried coal ashes merely as a mechanical agent in very stiff clay soils. I think it valuable there just as so much sand to loosen the soil and to make it lighter and more workable. For manuring purposes I do not think that coal ashes have any value; at least, if they have, it is so infinitesimal that I think a ton of pure lake sand and a ton of coal ashes are of about equal value.

Mr. BUCKE.—I have used soft coal ashes in making walks in the same way as Mr. Beadle has used gas lime, and they make a very nice walk indeed.

Mr. J. C. BOWERS (of Berlin).—I should like to say a few words with respect to the usefulness of coal ashes for pear trees. I had a very large pear tree which was getting somewhat aged and decrepid, and to rejuvenate it I thought I would try an experiment with coal ashes. I put about thirty bushels about the tree, and the results were surprising. The tree is as thrifty to-day as it was thirty years ago, and it has grown remarkably since the ashes were applied six years ago. At that time it had every appearance of dying.

Mr. A. M. SMITH.—Were there any wood ashes mixed with the coal ashes?

Mr. BOWERS.—No; they were pure coal ashes.

Mr. BUCKE.—Did you mix them in the ground?

Mr. BOWERS.—I put them on the top of the ground, and left them to mix in themselves. I suppose the tree is one of the largest in the Province. The largest yield of fruit it has given in one season was twenty-four barrels.

Mr. DWIGHT.—We have found coal ashes useful for loosening clay soil, but have not tried them as manure.

Mr. HOOPER.—I have seen coal ashes put on clay soil, and I thought they made it harder instead of looser.

Mr. CROIL.—I should recommend coal ashes very much for a mulch. I should like to hear Mr. Geddes' opinion.

Mr. GEDDES.—My experience of coal ashes in mulching is not very great. I had a very fine pear tree, a variety recommended by this Association, Clapp's Favourite. I introduced it into this section, and took a large number of prizes with it. But, unfortunately, my family took the notion to throw their coal ashes about it, and I found that it destroyed the bark of the tree.

Mr. WRIGHT.—I wish to make one remark with reference to mixing ashes with clay. We sometimes put sand in with clay to make bricks, and sometimes to make the clay mellow. It all depends on the state of the soil when you dig it. If you mix it when the soil is wet, you will make a brick, but if you do so when it is dry you will make a fine mellow soil.

#### WIND BREAKS.

By DR. EBY OF SEBRINGVILLE.

The Secretary then read the following paper by Dr. Eby, of Sebringville, on this subject:

The proper protection of his stock and his crops is a question of so great importance to the agriculturist that it deserves the serious consideration of all that take an interest in the prosperity of the country.

Everyone knows the importance of providing shelter in a storm, and protection against

cold for our cattle and other live stock, but few seem to consider (though they can appreciate it for themselves) the value of shade trees for their stock. They forget that cattle, like other sentient beings, suffer immensely from the fierce rays of a July sun. Let us remember that our cattle suffer from heat and thirst, and we shall no longer wonder that our cows break off in their milk when the warm weather comes on and they are pastured in a field without a single shade tree, and without getting water from morning until night.

But not only our cattle, but our plants also require protection. Our farmers need not be reminded that their fall wheat suffers greatly from too early exposure in the spring to the cold, dry north-west winds to which our country is frequently exposed at that time of the year. Many of the older settlers will remember that it was not always so. It is well known that the growth of fall wheat is becoming more precarious each year, and that the spring crops need much better cultivation than formerly. Why is this?

It is well known that instead of the snow lying equally all over our fields—as was the case when they were well protected by forests—it is now driven by the fierce wintry blasts to the fences and roads, while the middle of the field has a very thin covering, which melts away on the approach of a few warm days in the spring, leaving them exposed to the cold, dry winds of which I have already spoken. This difficulty constantly increases as the denudation of the country of its forests goes on. In South-western Ontario, the Western States and the great North-west, where there are no mountain ranges to check the force of the winds, protection must be sought by artificial means.

As our country is almost entirely arable, it cannot be expected that a sufficient area will be left wooded to afford the necessary protection to our fields. At best there will be large tracts exposed to the full sweep of the wintry blasts. To provide a protection against these an extensive system of tree planting should be adopted. Not only should every roadway have a belt of trees at its side, but every field should be protected by a good belt of trees against the prevailing winds. Were this done throughout the length and breadth of the country we would soon realize the difference. There would doubtless still be storms, but their force would be broken. Snow drifts would be almost unknown. While the whole country would be cleared and under a high state of cultivation, it would enjoy almost the same immunity from storms as if it were one continuous forest.

But it is objected that so extensive a system of tree planting would take up a very large amount of soil from cultivation. True, but would it be better to have an inferior crop on ten acres than a good one on nine?

In Europe it is estimated that 25 per cent. of all lands must remain forested in order to retain the rest in a state of fertility. Where the forests are reduced to any considerable extent below that amount, it is found that the climate becomes changeable. Great droughts will become prevalent, while at other periods there will be great floods and inundations. The amount of the total rainfall during the year or a series of years may vary little from what it should be, but instead of the precipitation being more or less constant it becomes fitful, with heavy storms at times followed by long droughts.

The disastrous results that are sure to follow the continued denudation of our forests are now so generally recognized that it will not be necessary to impress them on this occasion. Countries that were fertile while they had a due amount of forest, or were covered with fruit trees, have become almost barren deserts since they have been almost entirely despoiled of their trees. I need here only refer to Palestine—a country at one time described as flowing with milk and honey; in other words, it was rich in pastures and flowers. At a later date, while its hills and mountains were covered with fig and olive trees, it supported a dense population, but deprived by barbarous hands of its trees, the soil, instead of being retained on the hillsides, as was the case while it was densely interwoven with the fibrous roots of trees and grasses, was washed down into the valleys, leaving the hills and mountains as barren rocks. It would require several centuries of careful tree planting to accumulate a new soil and restore it to its pristine fertility.

On the great plains of this continent the injurious effects resulting from the denudation of forests would not be as rapid and as destructive as in a hilly or mountainous region, but sufficiently so to require the serious consideration of statesmen and economists. To avoid those evil results much may be done by systematic tree planting.

Let us suppose a man has 100 acres or some multiple of it. Now, let us suppose he

plants a belt two rods wide on the west and north sides of every ten acre field. This would give us one acre, or ten per cent. of the whole field. This would really be a smaller proportion than should be in forest, but a systematic planting of even so small a percentage of our lands would give us an effectual check to the sweep of the winds and would give shade to our cattle in summer. As our fences take up an average of eight feet in width, a belt of trees two rods wide would really take up only about  $7\frac{1}{2}$  per cent. more of the field than is required for the fence alone. By planting the west and north sides of every field, the south and eastern sides of the adjoining fields would also be protected. I would advise planting in the following order :

5.	.	.	.	.	.	.	.	.
4.	.	.	.	.	.	.	.	.
3.	.	.	.	.	.	.	.	.
2.	.	.	.	.	.	.	.	.
1.	.	.	.	.	.	.	.	.
2.	.	.	.	.	.	.	.	.
3.	.	.	.	.	.	.	.	.
4.	.	.	.	.	.	.	.	.
5.	.	.	.	.	.	.	.	.

The middle row should if possible be evergreens. For this purpose our native white pine (*Pinus strobus*) may be selected. The Norway spruce (*Abies excelsa*) may be used if it could be more easily obtained, or if for other reasons it may be preferred. Any other evergreen will do, but the above are to be preferred as the most rapid growers, and the most valuable when grown. The trees should be planted four feet apart in rows four feet from each other. The second rows, those on each side of the middle row, should be planted with some quick growing, soft wood. For that purpose soft maple or poplar maybe selected, but elm or white ash would be more profitable. The European larch (*Larix Europea*) is very often used as a nurse for other more slowly growing trees. In case the ash is selected, the trees should be planted two feet apart in the rows. When the trees will have grown large enough, when split through to make barrel hoops, every second tree should be removed so as to leave the remaining trees four feet apart. In doing this, the trees standing opposite those of the middle row should be cut away, while those standing between should be left so as to preserve the diagonal plan.

The third rows on each side should be planted with some valuable wood as maple, oak, ash, walnut, butternut, etc. These rows properly thinned out, can be left standing until the trees have reached maturity. The fourth rows on each side should be planted with some quick growing trees. The larch or our native tamarac would do very well for this purpose. Any of the trees mentioned for the second rows, will also do for the fourth rows. The object will be to get some tree or trees that will grow up to be valuable before they materially crowd on the neighbouring rows. The last row on each side should be planted with trees that naturally have a tendency to grow upwards. The larch or elm will answer this purpose very well and should be selected for the southern and eastern sides, while some of the hardier evergreens should be selected for the windward sides. The Scotch pine (*Pinus sylvestris*) is especially well adapted for this purpose, being very hardy and fond of the light and air.

Other woods than those I have indicated above may be planted should they for any reason be preferred. The chestnut would be a valuable addition to the list for those districts in which it will grow. The catalpa and the mulberry should not be overlooked. Both are most valuable trees, but their success in our climate is a question that only future experience can answer. A few cherries and birch should be found in every grove. For wet grounds select elm, black ash, arbor vitæ (common cedar), aspen, willow, etc. The white pine and the tamarac will also flourish on wet grounds, but care must be taken not to plant the larch on grounds on which water is stagnant.



After the trees have grown to such a size and height that they begin to crowd each other, every second tree in the second and fourth rows on each side should be removed, and when they again begin to crowd each other every second tree in the remaining rows should be cut out. This will reduce the number of trees to one-half and will leave the trees eight feet apart in the rows. When the trees grow still larger, so as again to become crowded then the second and fourth rows on each side of the middle row must be entirely removed. This will leave the trees eight feet apart each way. This will give them ample room to grow to a fair size, but if it is desired to have very large trees, they must be given still more room. Care should always be taken to preserve the original diagonal plan, as that will offer the most effectual check to the winds.

By stretching wires along one of the rows of trees after they have grown so large that cattle can no longer injure them, a good fence will be obtained, while the cattle find ample shelter on each side of it.

The object in planting so closely as I have advised is to get the trees to grow upwards, and not waste their strength in throwing out side branches. By planting them closely they will all grow upwards so as to keep in the light. Some writers advise planting even more closely than I have directed. Some direct planting a tree every two or three feet. This, I think, except in special cases, as the ash, elm, hickory, etc., which can be used while still small, would not be found advisable. The thinnings will hardly pay for the extra labour and expense.

This is a subject of great importance to fruit growers. Our orchards need the protection that would be afforded by such shelter belts as I have described. It is astonishing how little attention is paid to the protection of our fruit trees against storms. How many orchards have any protection whatever? Yet how much might be done profitably in this direction by a little labour and a trifling expense. The time will come when a man would no more think of planting an orchard without a shelter belt of trees than he would leave it without protection against cattle or sheep. The one is as important as the other. On the prairies of the western States this subject is better understood. There great efforts are made to obtain protection against the fierce winds that sweep unchecked over the treeless prairies, while in Canada, so rich in forests and woodlands, we put forth no exertions to retain or restore the protection so lavishly provided by nature.

In conclusion allow me to quote the testimony of a few men whose great experience makes their opinions on this subject worthy of the highest consideration.

A writer in the *New England Farmer*, Vol. vi., 350, in speaking on this subject, says: "It is indeed astonishing how much better cattle thrive in fields even when moderately sheltered than they do in an open exposed country. In the breeding of cattle a sheltered farm, or a sheltered corner of a farm, is a thing much prized; and in instances where fields are taken by the season for the purpose of fattening cattle, those most sheltered never fail to bring the highest rents."

That enthusiastic tree grower, the late Dr. John A. Warder, of North Bend, Ohio, in a paper read before the Northern Illinois Horticultural Society, speaking of shelter belts for fruit trees, says: "Evergreens may be planted here and there through the orchard with very great advantage. A single row of such trees outside will afford a great deal of protection from the winds after a few years, indeed, from the first; but a closely planted belt of two or three rows will be much more effective. These should not be set too near the orchard trees; two rows may be allowed, or, if closer, the outer rows of the apples can be cut out in a few years to make room for these nurses when they require more space. The evergreens may be set in double or triple rows, and alternately, so that every tree shall be opposite the space in the next row.

Referring to the Scotch pine, Prof. C. S. Sargent says: "The rapidity of its growth in all situations and its economic value, make the Scotch pine the most valuable tree farmers can plant for screens and wind-breaks about their fields and buildings, and for this purpose it is recommended, in the place of the more generally planted Norway spruce, which, though of rapid growth in its young state, does not promise, in our climate, at least, to fulfil the hopes which were formed with regard to it.

O. B. Galusha, of Illinois, says: "I think it may be safely estimated that an average of one-twelfth part of all our crops of grain and large fruits are destroyed by violent

winds, which a system of protection or its equivalent in groves, would so far check as to prevent the destruction. If this is true such protection would save the husbandman and orchardist its entire cost every two, or at the most three, years. Such protection, too, would by causing the snow to remain spread evenly over the surface enable farmers to raise winter wheat in localities where it is now impossible to do so. If we add to the benefits of the culture already considered those far-reaching and incalculably valuable climatic influences which would flow therefrom, we must also admit the necessity of commencing this great enterprise at once and prosecuting it with vigour."

The following suggestions concerning shelter belts are offered by Messrs. H. M. Thompson & Son, of Milwaukee, Wis.:

"It has been found that belts from seven to eight rods in width are, all things taken together, the best. These belts should be planted on the outside with some evergreen whose roots would strike deep into the ground and do not spread near the surface, and whose leaves and branches will afford protection from the winter winds. In the centre can be placed the deciduous trees. If, however, the farmer wishes to experiment, and should think belts of this width entail too much cost and labour, belts of two or three rows will be found to make remunerative returns, and even one row planted, say not more than six feet apart, will give rich returns in increase of crops, and add very much to the attraction of the estate. The trees for planting should be those best adapted to the soil and situation, and will not vary much with different localities. Belts composed of Scotch pines, Norway spruce, white ash, and European larch, planted from the outside of the belt in the order named have been found to meet, in almost every particular, the need for which they are planted, and to afford to the farmer every protection in the way of timber he can want. The value of such a timber belt is felt very early, and cuttings for stakes, hoop-poles, bean-poles, and fuel begin much earlier than may be thought; while the after products of hop-poles, telegraph-poles, railroad-ties, and lumber for general use follow year by year, and are a constant annual source of profit."

In a lecture delivered in the University course at Rockford, Illinois, in 1870, Hon. J. G. Knapp, of Madison, Wisconsin, speaks thus of the influence of forests: "An extensive farmer in Ontario Co., New York, informed me some years ago that out of 200 acres of promising wheat which he then had growing, all was completely destroyed except those portions sheltered by woods, the total loss being four or five thousand dollars, most of which, he believes, would have been saved had his land been protected by timber belts."

The *Minnesota Forest Tree Planters' Manual* says: "The protection thus afforded to growing crops would of itself have been of inestimable value. The protection afforded to orchards and other fruit-growing institutions would alone repay the cost, while the comfort afforded to man and beast would be beyond the power of figures to express."

Mr. BEADLE.—I wish to ask leave to thank Dr. Eby for giving us this paper. It is a labour of love with him. The subject he has brought before us is one in which fruit-growers and farmers generally throughout the country are taking a great deal of interest. We have wasted much labour and energy in cutting down too many of our forests, but it is not too late to preserve what remains or perhaps to build up again. We possess great wealth in our forests in Canada if we rightly husband them; but if we go on cutting them down without any reference to the future, the time will soon come when we shall have killed the hen that lays the golden egg. The Americans are urging strongly for a repeal of the duty on foreign lumber in order that they may come here and destroy our forests and keep their forests to themselves—in other words, to sacrifice us to their good. If our Government and our people will insist that our forests shall be cared for, and that only as much timber will be cut as will give our own people a continuous supply, as is done in Germany, we may preserve this heritage that God has given us for ever. Mr. President, I want to thank Dr. Eby for bringing this question before us. (Applause.)

The PRESIDENT.—I am sure we all join in the sentiment expressed by the secretary, of thanks to Dr. Eby for his valuable paper. I would ask the gentlemen present to signify their thanks to Dr. Eby by rising.

The Association unanimously responded by rising to their feet.



Dr. EBY.—I am very much obliged for the hearty manner in which you have received my paper. I hope it may be of some service to you or to some readers in the future, if it is, I shall be amply repaid for my labour in preparing it. (Applause.)

### THE BEST FRUITS FOR BERLIN AND VICINITY.

The PRESIDENT.—The next subject on the paper is one that should especially interest the people in this district. "What are the best varieties of fruits for Berlin and vicinity? We hope all the local men will give us the benefit of their experience.

Mr. HENDRY.—My experience has not been quite extensive enough to enable me to say positively what are the best varieties for this neighbourhood. I have a small growing orchard in which the apples that have always succeeded best are the Maiden's Blush, the Early Harvest, the Sweet Bough, and the Duchess of Oldenburgh. These bear regularly every year. Of pears I only grow a tree or two. The most successful varieties of raspberries with me are the Philadelphia among reds, and the Gregg and Doolittle among blacks. The Mammoth Cluster is dying off year after year, from what cause I do not know; the stem turns black. The gooseberry I have not paid much attention to. I first tried the Houghton but changed to the Downing, which is a better bearer and produces superior berries. I have discarded the growing of strawberries except to a very limited extent, as the dry weather burned them out terribly. The bulk of my strawberries are Chas. Downing, which grow well, are easily taken care of, and will yield three or four crops before it becomes necessary to turn them under. The Sharpless I always have, my only difficulty with it being that the robins are too fond of it. There is no danger of the robins touching the Wilson so long as you can feed them on the Sharpless. For market it is too delicate, but for home use it is certainly a very fine berry. On the whole, my experience leads me to prefer the Chas. Downing. I grow no cherries but the sour cherry commonly grown here. The finer varieties of cherries, after growing for a few years, die down, whether from the summer heat or winter cold I do not know. Pears do not succeed here. The Bartlett does fairly well, however. I have only a few grapes. The only ones I have been able to ripen are the Delawares and the Champions. I have also Moore's Early, the Telegraph and the Concord, but I have never been able to do much with them, and this summer they look less promising than ever. The frost killed the vines considerably, and I find that they are sprouting up from the roots. I have quite a number of plum trees. The Lombards have been my best bearers. The curculio is rather destructive to them. I lost two or three of my trees this spring. I think they were weakened by overbearing and unable to stand the severity of last winter. The Bradshaw and the Imperial Gage have grown very well. We like the quality of the Gage, but I think the tree is not very hardy.

Mr. M. B. SCHANTZ.—I have as yet had very little experience in fruit-growing, as I am just beginning. Of raspberries I have, like Mr. Hendry, found the Philadelphia the best. The Cuthbert is a nice berry, but is not very prolific. The same may be said of the Gregg. Of the larger fruits, I am not yet in a position to speak with confidence. My apple trees have not begun to bear yet. I have a number of plum trees growing, but I cannot get them to bear. They all go to wood and foliage. The Sharpless is the most satisfactory strawberry I have.

Mr. BOWERS.—We do not raise more small fruits than we require for family use, sometimes not enough for that. Apples are our standard crop. The Colvert and the Northern Spy are both successful: but the Newtown Pippin is my favourite. In pears, the Bartlett and the Flemish Beauty both grow very well. We used to grow some plums before the black knot came. The only plums I have now are a few of the Wild Goose, and the black knot is beginning to attack them. The cherries are all gone except the Ox Heart, and the black knot is appearing in it. The only grape I have is a blue French grape, which I grow for family use. It ripens in the latter part of September or beginning of October. My father got a cutting of it from a man who brought it from Alsace. It sets nicely in the bunch and is a good eating grape. Though not so sweet as the Delaware, it has a better flavour than the Concord.



Mr. GEDDES.—The most successful varieties of apples I grow are the Rhode Island Greening, the Baldwin, the Duchess of Oldenburgh, and the American Golden Russet. I have also an apple called the Gates, which is very useful either for cooking or dessert. It ripens in October, and will keep till Christmas, but no longer. It is slightly striped, and its flavour is delicious. Plum trees with us are a failure. They have gone down one after another until I have not one left. Cherries have suffered equally. My opinion is that the sooner we get rid of all our cherry and plum trees, for a time at any rate, the sooner shall we get rid of the black knot pest. Strawberries I do not grow. In red raspberries, I confine myself to the Clark, which suits me very well, and in blacks, to the Mammoth Cluster. The Early Wilson would take well in our market if it could be grown, but I fear it will not stand the winter. Gooseberries are not a success with me; the Downing, I suppose is the best, although it is subject to mildew. Houghton's Seedling is very small, and I think is hardly worth cultivation, at any rate for market.

Mr. S. Y. SHANTZ.—For an early apple, my choice would be the Red Astrachan. The St. Lawrence and the Colvert are both very nice. The English Russet is quite hardy here. The Northern Spy is also a hardy tree, but the greatest objection we have against it is that it takes a long time before bearing fruit. I have some trees which have been set out nine or ten years on which there is no sign of fruit yet. The Baldwin is rather tender for our climate, otherwise it is a very fine apple. The King of Tomkins County is a good apple, but it is not a very good bearer with us. We have quite a lot of Greenings, and they are quite successful for a shipping apple.

Mr. BUCKE.—Where do you market your apples?

Mr. SHANTZ.—Generally in town, where they are often bought by shippers. The Snow apple is a good bearer, but during the past few years the fruit has been very much spotted.

Mr. GOTT.—Have you had that difficulty with other varieties?

Mr. SHANTZ.—Two years ago all the apples we had were scrubs, except the Red Astrachan and Golden Russets, which were as fine apples as we ever had. But the Snow apples were so poor that they were not worth picking for cider.

The PRESIDENT.—Do you grow any pears?

Mr. SHANTZ.—We have a few old trees that are doing pretty well. One is the Flemish Beauty; the names of the others I do not know, as they were on the farm when I got it. We have also a lot of young trees that are just coming into bearing. Our soil seems to be too heavy for English cherries; and last year we cut down all the common cherry trees, owing to the black knot. We have a few plums, but the curculio renders them of very little value, although last year we had a fair crop. In small fruits, we only raise a few strawberries and raspberries for our own use.

Mr. FREDERICK MOYER.—Of apples, I would recommend the Red Astrachan first, and the Duchess of Oldenburgh next, the trees of both are very hardy, and that is an important consideration in our climate. The Colvert is a good tree and a fair bearer. The Golden Russet I consider the best late apple of all. I cannot recommend the Northern Spy, as the tree no sooner begins to bear than it begins to die. The Ribston Pippin is unsuccessful, as the fruit is apt to drop before it is ripe. The King of Tomkins County I like very well, but it is not a heavy bearer, and I have lost nearly all my trees from winter killing. The Rhode Island Greening is also too tender, and the Baldwin is "played out" here altogether, the trees have nearly all died. The same is true of the Spitzenburgh. Talman's Sweet bears well. I have the Tetofsky and the Peewaukee, both of which do well. The Alexander is hardy, but I do not care for the apple. The Titovka I got this year for the first time; it appears to be growing nicely. I lost hundreds of pear trees last winter, I am sorry to say. The Flemish Beauty is the only one I would recommend. Six or seven years ago, I got thirty-five varieties of pear trees, and now I have only three or four varieties left. The Lawrence is a pretty good winter pear. Last winter was especially destructive to my pear trees. A few years ago plums grew abundantly, but now, I am sorry to say, my chief work in my plum orchard is cutting down the trees. I had once also about forty cherry trees, of over a dozen varieties, but now I have only two varieties, Governor Wood and Black Eagle, and little more than the same number of trees, left. I am just beginning to grow small fruits largely. I have a

large variety of raspberries, including the Mammoth Cluster, the Doolittle, the Philadelphia, the Clark, the Reliance, the Turner, the Brandy-wine, and the Highland Hardy, all of which are very successful on my soil, which is heavy loam; with a gravelly sub-soil. The strawberry I chiefly cultivate just now is the Sharpless. It was so highly recommended and I liked it so well a few years ago that I planted an acre. But I won't go it so strong again. I think every man should experiment cautiously at first. The Crescent Seedling shows a good crop. The Wilson bears well, but my neighbours do not like it. The Manchester, however, I prefer to all others. I raise four varieties of currants—White Providence, Black Naples, Lee's Prolific, and the Champion of England. Fay's Prolific I tried two or three years ago, and it did not grow, but this year I got it from Mr. Leslie, and it is growing nicely. In blackberries, Stone's Hardy is the best; I have not lost one plant. While others froze last winter down to the snow line, this variety escaped unharmed.

Mr. ALEX. ROY.—I raise a few varieties of apples, pears, and plums. The best varieties of apples, according to my experience, are the American Golden Russet, the Rhode Island Greening, the Ribston Pippin, the Northern Spy, and the Maiden's Blush. I have several other varieties, including the Roxbury Russet, the Dutch Mignonne, the Duchess of Oldenburgh and the Beauty of Kent. In pears, I have the Flemish Beauty, the Bartlett, Clapp's Favourite, the Eurydale, the Hozenchenck, the Beurre Bosc, the Sheldon, the Louise Bonne de Jersey, the Osband's Summer, Elliot's Early and others.

Mr. GORT.—What is your experience of the Bartlett?

Mr. ROY.—The trees are hardy. In plums, I have the Bradshaw, the Lombard, the Yellow Egg, Coe's Golden Drop, the Imperial Gage, the Green Gage, the English Damsion, and others. I have red, white and black currants—the Red Cherry and the White Grape. I do not grow grapes at all. The only strawberry that I cultivate is the Crescent Seedling.

At six p.m. the Association adjourned until eight o'clock.

On resuming the discussion,

Mr. GEO. COPELAND.—The idea I wish to bring before the meeting is not so much what can be grown successfully as what cannot be grown successfully in our neighbourhood, that is, about eight miles east of Berlin. The Ribston Pippin has proved to be an almost entire failure on light soil, the tree not being healthy and the fruit not coming to perfection. The Spitzenburg and the Greening may be placed in the same list. We have also found this season that only the very hardiest kinds of raspberries have stood the test of winter. The Mammoth Cluster and even the common black raspberry bushes were frozen down to the snow line. The Cuthbert suffered from frost, but recovered better than the other varieties. The Turner, however, came through perfectly hardy. The three varieties of apples I have mentioned succeed well in some orchards; but the fruit-grower who plants any of them in light soil in this neighbourhood will, I think, only meet with disappointment and loss.

Mr. SIMON ROY.—The varieties of apples I would recommend for this neighbourhood are the Northern Spy, the Golden Russet, the Ribston Pippin, the Canada Red, and the Rhode Island Greening. The pears I would recommend are the Flemish Beauty, the Bartlett, the Supreme de Quimper, the Kingessing, the Louise Bonne de Jersey, the Doyenne d'Été, the Duchesse d'Angouleme, Elliot's Early, and Beurre Diel. Plums have been a failure, owing to the black knot. The Yellow Gage, however, appears so far to have been entirely exempt from it. The Victoria currants are the best; the White Providence, La Versaillaise, and the Cherry are also good. I would not advise anybody to plant the Red Grape currant. Lee's Prolific is a very good currant, very similar to the Black Naples, which still takes the lead among blacks. The White Grape currant is dwarfish in growth, but a great bearer. My cherry trees keep destitute of fruit, and are all afflicted with black knot.

Mr. LESLIE.—I would like to ask Mr. Roy for some information about his Russian mulberry.

Mr. ROY.—I have two varieties of mulberry, the Chinese and the Russian. The latter is of good size and very sweet. Mr. Jacob Y. Shantz grew it from the seed. The mulberry can be grown from cuttings like the gooseberry or the currant.



Mr. H. L. JANZEN.—With regard to apples, the Red Astrachan is our first hardy variety. The tree never winter kills, so far as I know, and is an abundant bearer, and the fruit is of good size, of excellent quality, and saleable. The Tetofsky would perhaps come next, but its size is a little against it. Where only the hardiest varieties succeed the Tetofsky would be an excellent choice, but here, where we can grow other apples, I do not think it would be wise to plant it extensively. The Duchess of Oldenburg is hardy—I never heard of it being winter-killed—it is an abundant bearer, it bears every year more or less, and the fruit is large, of fine quality, is a splendid cooking apple, and a fair keeper for an early apple. That is the apple I would place next. Then I would name the St. Lawrence—it is a magnificent apple. The Autumn Strawberry is also a fine apple, hardy and a good bearer. Then comes the Fall Pippin, and that would complete the list of summer and autumn apples for a small orchard. Among winter apples I would plant the American Golden Russet more extensively than any other variety. It is an iron-clad tree that will stand any amount of cold, and will bear every year. The apple is a good keeper and an excellent shipper, and is much sought after in the English market. Another excellent variety is the Northern Spy. It is true the tree is a long time in coming into bearing; still, thorough pruning will hasten its maturity, and when it once begins to bear it will bear heavily. The Baldwin succeeds with me, although with some of my neighbours it has been winter-killed. The King of Tompkins County is another excellent variety which has succeeded in my orchard, while in others it has proved too tender. With regard to pears I think the Bartlett is the best we can grow. The difficulty is that the tree winter-kills. That, however, can be obviated to a considerable extent by grafting it on a hardier variety. The Duchess d'Angouleme never winter-killed with me, and the fruit is large and of good quality. The Louise Bonne de Jersey, the St. Lawrence, and the Beurre Clairgeau are all good croppers. The Seckel is a very nice pear, but rather small. The Beurre d'Anjou I have found quite hardy. The Flemish Beauty is more subject to blight than any other variety. Though a large pear, a good cropper, and as hardy as any we have, in some seasons it is entirely ruined from this cause. Of plums I have not had so much experience. I have a number of varieties, but the black knot has been terribly destructive. The Imperial Gage has suffered less and succeeded better than perhaps any other. The Washington is a very fine plum; the tree is hardy and thus far has been comparatively free from black knot. The Lombard was one of the first attacked by it, however. Cherries I would put down as almost a complete failure in this district with the exception, perhaps, of the common sour cherry and the Early Richmond. We grow the Elton, and although it blossoms abundantly every spring, our frosts are so late that the blossoms are nearly always destroyed. During the past six or seven years I have only had one crop of sweet cherries. In strawberries I have had better success with the Colonel Cheney, have made more money and given better satisfaction to my customers than with any other variety. I esteem it very highly. It is as good a cropper as the old Wilson's Albany, and I think has a sweeter and better flavour. The Crescent Seedling has given great results. It is a very abundant bearer, but towards the close of the season it dwindles down to so small a size and the plants multiply so fast that they seem to exhaust the old plant, and it never does so well after the first year. I have also grown the Bidwell, but I cannot speak very highly of it. The Sharpless proves to be the best large variety I have, and where people discriminate, I think I should grow that variety; but here the Crescent Seedling will bring as good a price as the Sharpless. I have grown a number of other varieties, including the Captain Jack and the Charles Downing, but I would place the Colonel Cheney at the head of the list. With regard to raspberries, the Philadelphia, I think, is the hardiest I have grown. It is a better grower and cropper than the Turner.

Mr. BEADLE.—Does the Philadelphia sell well in your market?

Mr. JANZEN.—Yes, it sells quite readily, but not quite so well as the Cuthbert, which is a fine large berry of excellent quality and very fine colour; but the Philadelphia is more productive.

A MEMBER.—Do you grow the Franconia?

Mr. JANZEN.—I have the Franconia, but I do not like it. It does not bear very w



with me. The Reliance did well during two or three seasons, but in the last two seasons the plants have receded considerably.

Mr. GOTT.—Have you any good yellow variety.

Mr. JANZEN.—The Golden Thornless is the best yellow variety I have had ; but I do not care much for the yellow varieties. I do not think their quality is equal to that of the reds. There may be some tender varieties which are better in quality, but we cannot grow them. Among the blacks, my favourite for market is the Doolittle, and the next would perhaps be the Mammoth Cluster. We also grow the Gregg, but it is too tender for our locality, and is winter-killed nearly every year so badly that there is hardly any crop. Of currants we grow the Cherry, La Versailles, the White Dutch, the White Grape, the Black Naples and Lee's Prolific. Mr. Roy spoke of the resemblance of the last two varieties. The only difference I can see between them is that Lee's Prolific is more subject to dropping the berries than the Black Naples ; in colour, size and flavour the berries are much the same. In gooseberries I have not done much. The Downing and Smith's Improved I like the best. The Houghton is rather small.

Mr. BUCKE.—Mr. Janzen's experience has been so different from Mr. Roy's that I would like to ask if there is any difference in their soils.

Mr. JANZEN.—I think Mr. Roy's soil is more clayey than mine. Mine is principally sandy loam. Then I am located on almost the highest part of Berlin, while Mr. Roy's land lies quite low.

Mr. ROY.—In my soil you will find one part sandy loam, another part clay, and another part gravel.

### THE STRAWBERRY.

The subject of "New Varieties of Strawberries" was then taken up, in connection with which Mr. W. W. Hilborn, of Arkona, read the following paper:

It being too early to give a satisfactory verdict on the merits of different sorts, I will only give a few notes, and first those taken just after the frost of 29th May :

All berries set, and all blossoms open killed on all varieties.

Wilson's Albany—About half out in bloom, many killed not open.

Crescent Seedling—About one-fourth out, very few killed not out ; very promising.

Capt. Jack—Not many open, but few hurt not out.

Sharpless—Half out ; a great number hurt not out.

Kentucky—Just beginning to open, not many hurt unopen.

### OF ARNOLD'S SEEDLINGS.

Arnold's Pride and Bright Ida—About half out ; many killed not out.

Maggie and Alpha—More than half out ; not many killed not open.

New Dominion—About one-third out ; not many hurt not open.

Early Canada—Out most of any ; perhaps two-thirds, made a good show for early fruit.

Bidwell and Miner's Prolific—About one-third out ; not many hurt not out.

Piper's Seedling—One-third out ; plenty buds left for a crop.

Seneca Queen—One-half out ; not many hurt not out, enough buds left for a crop.

Mt. Vernon and Gold Defiance—Just beginning to open ; quite a number hurt not open.

Jersey Queen—None out ; a great number killed not out, fruit buds most tender of any sort.

Manchester—Very few out ; not hurt to any extent.

Daniel Boone—The same.

James Vick—Not more than one-tenth out, not enough buds killed ; one of the most

profuse bloomers I have ever seen, none more safe from late spring frosts than the last three.

JUNE 23RD.—Early kinds ripening quite fast. Of the old varieties, Crescent is far ahead of all other sorts. Next in order of merit and ripening is Wilson and Capt. Jack. The greatest objection to Capt. Jack is that it parts from the hull too easily, which makes it difficult to pick. The Manchester, a later introduction, gives great promise of being one of the most profitable late sorts grown, is a strong grower on all soils, and throwing up strong fruit stems with a large number of berries of large size, good shape, and holding well to the end of the season. James Vick must be grown either in hills or very narrow matted rows, as it is a strong grower and sends out so many fruit buds that it cannot bring one-half to perfection unless grown as above. It is quite firm, will ship well. Of all the new sorts we have tried Daniel Boone stands far ahead, we have no old or new sort that makes such a grand show of large, even-sized fruit, good flavour, a strong grower, with strong fruit stems holding the fruit well up from the ground; although this is the first season we have had it full fruiting, it has been one of the most trying, it succeeds equally well on sand or clay loam. I think it has come to stay.

Prince of Berries we have only fruited on spring-set plants; it is very promising, plant strong and healthy, fruit of best quality.

Atlantic, fruited only on spring-set plants, I think will be very firm with good flavour, plant resembles the Wilson very much.

Jersey Queen is such a poor grower, I think it will be of little value.

Big Bob, big only in name, no value.

Piper's Seedling produces a great quantity of medium-sized fruit of poor quality.

Bidwell, too light in colour, too many imperfect berries.

Golden Defiance is very fine for a late sort for home use, not quite firm enough for market.

Mt. Vernon is a very promising late market variety. I think it will be very valuable.

Mrs. Garfield is not doing as well as I expected, shall give it another season's trial.

Cornelia is making a good growth of plant and shows indications of being the latest of all, as claimed by its introducer.

We have also on trial a number of other new varieties, some of which are quite promising, among which are Sucker State, Grand Duke, Legal Tender, Ct. Queen, Oliver Goldsmith, and some others, which we hope to report on next season, can only say now that they are all strong, healthy growers. We have also a great number of varieties that are of little value, although they were given the greatest praise by their introducers.

I think it is well to try a number of varieties in a small way to find out which will suit your soil and locality best; there is often a great difference in a short distance. For our locality I would name as the four best and most profitable varieties for market, Crescent Seedling, Daniel Boone, Wilson and Manchester; I think they will succeed on nearly all soils, and they cover the whole season. I hope we may be able to add one or two out of the many new sorts on trial.

Mr. GOTT.—We are glad to hear from Mr. Hilborn on the subject of strawberries. We would like very much, however, to know on what soil they are produced, whether clay loam or sandy loam, and whether subject to frost or not.

Mr. HILLBORN.—My soil is naturally well drained, a high, dry soil. We have strawberries both on sandy loam and clay loam, and they appear to be equally good. The clay loam is underdrained and the sandy loam is naturally drained by a gravel subsoil.

Mr. HUGO KRANZ, M.P. for North Waterloo, being present, the President requested him to address the association. In reply, he said: I must confess that I have more experience in fruit-eating than in fruit-growing. I just dropped in to-night in order to learn something. You have heard Mr. Roy and Mr. Janzen, the two oldest fruit-growers in this country, who, I think, can give you the results of the general experience here.

The PRESIDENT.—What varieties of strawberries do you prefer?

Mr. KRANTZ.—Good, sweet juicy ones. (Laughter.) I think the character of the soil and the lay of the land have more to do with the quality of the fruit than the particular variety. If you plant a fine variety on poor soil, and neglect it, it will soon degenerate. In Ottawa last winter, before the Committee on Agriculture, a gentleman

who gave us some information as to the best breed of cattle, remarked that the best variety of cattle is that which comes to the level of the intellect of the man who owns it and takes care of it. You may have the very best breed of cattle in the world, but the slovenly farmer will ruin it, while a good farmer will take our common native cattle, and with care and attention will make a good breed of it. The same thing is true of our fruits; it is cultivation that will bring them to perfection, and I believe our farmers may always raise plenty of fruit. I thank you very much for the few minutes during which you have listened to my poor remarks on the subject, to which I am almost entirely a stranger.

Mr. R. McMAHON.—I remember the time when I was about the only one in this part of the country who cultivated strawberries; now nearly everybody is growing them. I began with two varieties, the early Scarlet and the Wilson. Of the two I prefer the latter, which always succeeded well until lately. Now I prefer the Crescent Seedling, the Sharpless, and the Manchester.

Mr. LITTLE.—The most profitable strawberries for market are the Crescent Seedling, the Captain Jack, and the Wilson where it is well grown. The Colonel Cheney on good soil and properly fertilized you will find few to excel. Mr. Hilborn has several new varieties this year, including the Daniel Boone, the Mrs. Garfield, and the Cornelia.

Mr. A. M. SMITH.—What is the best new variety you have fruited?

Mr. LITTLE.—I think I would give the preference to the Daniel Boone and the Cornelia.

Mr. BEADLE.—What is your opinion of the Mrs. Garfield?

Mr. LITTLE.—With care and cultivation you will get a fine berry and plenty of them.

Mr. A. M. SMITH.—I do not grow strawberries for the fruit so much as I do for the plants. I have brought a number of samples to this meeting. A good many of them I have not been able to fairly test yet. All of them were just taken out of the bed where I had them growing for plants. [Mr. Smith exhibited and described some of the different varieties, including the James Vick, Arnold's Pride, the Daniel Boone, the Jersey Queen, Finch's Prolific, and others.] The Daniel Boone bears well, and I think is a good berry. For a general market berry I don't think we have got anything better than the Wilson yet, but in some localities you can make more money out of the Early Canada. This year, for my first picking, I got 25 cents, for the second 20 cents, for the third 18 cents, and for the fourth 13 cents a quart. The same price I realized for the first Wilsons. I have a berry that I got from Mr. Riddell; he lost the name of it, but he thinks it is the Harvey Davis. It has done remarkably well. The Manchester this year I left entirely alone, and the consequence is that there is not much fruit on it, but it would be valuable if fertilized.

Mr. LITTLE.—In 1882, when the Manchester first came out, I set out a number of plants of that variety, as well as of the Jersey Queen and Big Bob, perhaps two or three hundred feet away from any strawberries that were growing, and though the time was wet, and they could not be fertilized by the wind or the bees, I had from all three as perfect berries as any I ever saw. Perhaps the Secretary can explain that. Experts will tell you that you cannot produce a perfect berry without fertilization, but I sometimes think they go a little beyond nature.

Mr. BEADLE.—If you look closely at the flowers you will often find one that has both the stamens and pistils, and I presume it is these that gave you the berries.

Mr. DEMPSEY.—I have not tested many new varieties this season; I have a few of those that are not strictly new, which were set out in 1881 or 1882. Of all the new varieties I have tried up to last year I have found nothing to equal the two old varieties, the Wilson and the Crescent. I expressed the opinion two or three years ago that Arnold's Pride would yet come to be one of our choicest berries. It still remains, and will continue to remain, a new berry, however, until some one takes it up and pushes it. We have fertilized the James Vick a little this year; the fruit is all right if we could sell it by count, but by measure I am afraid it will scarcely pay.

Mr. CROIL.—I wish to say a word about the early Canada. Some time ago a gentleman sent me some plants. They came to me in perfect good order, and I planted them. They grew well, bore heavily, were hardy, and they were the only berries that were ripe



when I left home. I think their earliness will always commend them. The berries are somewhat sour, and they are rather small, but this is probably owing to the fact that the season has been remarkably dry.

Mr. BUCKE.—I would like to ask Mr. Little if he has tried Arnold's Pride.

Mr. LITTLE.—Yes, and I liked it remarkably well, only it was rather soft for shipping any great distance; but for the home market I think it is a fine berry.

Mr. F. MITCHELL (of Innerkip)—I took the strawberry craze a few years ago, and I tried every new variety as it came out; and I can corroborate what a good many gentlemen have said this evening as to the Crescent Seedling and the Wilson standing at the head. While I was so enthusiastic, I advised some people to plant these new varieties and they did so to their sorrow. I advise them now to confine themselves to the Crescent and the Wilson for market, and to the Sharpless for the table.

Mr. WRIGHT.—The principal varieties grown in my neighbourhood are Wilson's Albany and the Sharpless. We have also a few of the Triomphe de Gand and the Colonel Cheney.

Mr. BUCKE.—Arnold's Pride, the New Dominion, and the Sharpless, are the varieties I chiefly grow, and with success.

The Association then adjourned to the next morning.

On Thursday morning, June 26, the President took the Chair at ten o'clock.

### NEW RASPBERRIES.

The first subject taken up was "New Varieties of Raspberries."

Mr. A. M. SMITH, who was requested to open the discussion, said:—I hardly know how far back I am entitled to go in speaking of varieties as new. I suppose the Cuthbert is new to a good many. It is the best new red that I have fruited. I have not yet tested the Hansell sufficiently to be able to give an opinion upon it. Last year I fruited one of Mr. Arnold's reds, which was pretty successful. His Diadem did not turn out so well. The Souhegan, a new blackcap, is very promising. That and the Tyler and the Hopkins are very similar. Of the old varieties, the first one to ripen is the Highland Hardy, which I believe to be identical with a raspberry I knew fifteen years ago as the Elm City. I have made more money out of it than out of any other; but it is rather soft for shipping. The Turner comes next in ripening. It is of better quality and hardier than the Highland Hardy, but is still too tender for a successful shipper. The Philadelphia is an excellent bearer; it will produce more fruit than any other red variety. The Clark is very good in quality and a medium bearer, but a little soft for shipping; it is a first-class home berry. The Herstine is a better bearer, but even less hardy. The Brandywine is quite hardy, the best for shipping a long distance. It bears fairly and is of medium size, but is so prolific of suckers that you require to frequently use the hoe to keep them down. Brinkle's Orange is an excellent yellow raspberry for table use, but too tender for any part of Canada unless protected in winter. The Caroline is claimed to be similar to Brinkle's Orange, but though hardy and productive, in point of quality it is many degrees below it. Among blackcaps there has been more demand for the Gregg than any other, but it is a little too tender for our severe winters. The Ohio is a new blackcap highly recommended for its hardness and productiveness, though I have not fruited it yet. The Niagara, a red raspberry sent out by the Association, is a very fine, good sized, prolific berry, but it is a little tender and was slightly winter-killed last winter. Its colour will commend it for market, being similar to that of the Philadelphia. These are the principal varieties I have grown.

Mr. GOTT.—One thing we want badly is a good yellow raspberry. Brinkle's Orange if a little more hardy, would fill the bill satisfactorily. Amongst the newer reds, the Thwack is a promising variety. The Cuthbert is giving universal satisfaction wherever introduced. The Hansell, a new red, is not so successful. It often appears to be a mass of suckers without fruit. The Niagara promises well. We have fruited it on our grounds, and find it a fine, hardy grower, with a solid, bright-coloured fruit. Amongst the blacks,

favourite new varieties are the Tyler, the Souhegan and the Hopkins, which are all very much alike. After all, the Gregg is really the standard blackcap; it is one of the most substantial berries for market purposes, indeed I might say for all purposes, that we have. It may not entirely supplant the Mammoth Cluster, but we think it as good, and in some respects better.

Mr. HILBORN.—We are fruiting several new varieties of raspberries. The Cuthbert I regard as the best red. The Hansell, I think, is nearly as good as the best wild berry we get. (Laughter.) The fruit is small and scarce. Among blacks, we are fruiting the Tyler and the Souhegan this year for the first time. We are also fruiting the Hopkins, which I think will be a little larger than either, but not quite so early. We have also, one of Mr. Little's seedlings called the Early Canada, which seems productive, very hardy and early, but I am afraid will not be large enough.

Mr. LITTLE.—The Tyler, the Souhegan, and the Hopkins ripen at nearly the same time, and they are very excellent berries. With regard to red raspberries, I think the Cuthbert is king over all, although it is a little tender this year. I do not think enough has been said in favour of Shaffer's Colossal.

Mr. LESLIE.—I do not know that I have anything new to add. We have found the Cuthbert more reliable than any other variety we have tried.

The PRESIDENT.—Have you found the Gregg tender?

Mr. LESLIE.—Not exactly tender. It kills back a little, but still it yields a very fine crop.

Mr. BEADLE.—I might say, with regard to the Souhegan, the Tyler, and the Hopkins, that they ripen about the same time, and if I turned you into my berry patch, I don't think you could tell the difference between them. Sometimes I fancy one variety is a shade larger than another, and then I go again the next day and find that I have been mistaking a Hopkins for a Tyler. I am really unable to see any difference. You will find either of the three hardy and early, and good for the purposes of a black raspberry. The Gregg has not been tender with me. It stands the climate perfectly well, but it wants feeding and care to produce a crop. The Caroline, which has been mentioned, is the only yellow cap I have at present. I had the Golden Thornless, but I threw it out; it had no more taste than a bit of sawdust, and it was very dry. The Caroline is more juicy and better flavoured, but to compare it with Brinckle's Orange, as the catalogue did that induced me to try it, is to compare something good with something merely medium. Brinckle's Orange is one of the juiciest and finest flavoured berries, only it is not hardy enough for our climate. The Reliance may be a valuable berry in this section, and possibly farther north; but in the Niagara district it cannot be grown advantageously. It is a shade larger than the Philadelphia, but I doubt whether it will yield any more, or as many quarts to the acre. The Thwack you could put up and ship to Europe, but I don't think people would eat it when they got it there. I intend to thwack it out of my garden. The Superb I fruited last year, and I must say I liked its quality. It gives good promise, but I have one fear, that the grains would crumble so much as to make it useless for shipping purposes. The Hansell also fruited with me last year. I like its flavour, but, as Mr. Hilborn said, it is very like that of the wild raspberries. But I like the flavour of the wild raspberries too, and if the Hansell will prove to be hardy and a good cropper, it may serve as a home berry, but I think it will prove to be too soft for shipping long distances.

Mr. WRIGHT.—I have not tried any of the new varieties. The Cuthbert is the leading variety in my district. All our raspberries, however, suffer from winter-killing. Last fall I got some of Brinckle's Orange; they grew about three inches, and strange to say they came through the winter all right, and have some berries on them now. The snow covered them all winter and entirely protected them from winter-killing.

Mr. DEMPSEY.—I have tested some of the new varieties. As to the Hansell I am not surprised, after fruiting it, that Mr. Hansell sympathized with it when he found that it had such a struggle for its existence. It sends up sprouts in all directions as far as two rods from the original plant. In fact it lives principally under ground. The berries you could not tell from the raspberries that grow right out in the fields. That was the result of my experience last year. This year I have had them ploughed down to half a dozen plants, and next year, if they give no better account of themselves, we shall know no more



of the Hansell. The Turner and the Reliance are very good berries, hardy and productive, some improvement on the Philadelphia, and likely to fill the bill for canning purposes very well. The Cuthbert is, strictly speaking, a first-class berry, perfectly hardy, but the one difficulty with it is that it does not show quite fruit enough. It sold well in Toronto last year. Coming to the Blackcaps, I think very little of the Gregg. To begin with, it is tender: the tips of the plant freeze every winter with us. Then the picking girls object to it because they have to pull so hard when picking it. It is not a bright-coloured berry, but a sort of tawny black, and I do not care for its taste. I go right back to the Mammoth Cluster to supply my own table, and when you come to pick it it has a great advantage over all other Blackcaps. About three pickings will clean your plant, and the girls prefer it to almost any other variety because they can take off a whole handful at once, and this consideration is important both to those who pick them for a couple of cents a quart, and to those who grow for market. True, the Mammoth Cluster is a little soft, but still it reaches the market in very fair condition. I have most of the new varieties under cultivation, but I am not yet in a position to give an opinion of them.

Mr. BEALL.—Are you growing Brinckle's Orange?

Mr. DEMPSEY.—No. It proved so tender with us that we abandoned it. We do not care to give the time to any that need constant protection.

Mr. BEALL.—Every time I hear Brinckle's Orange mentioned an objection is raised against it that it is so very tender. I do not find it so. In my experience it is as hardy as the Philadelphia, and we get a good crop from it almost every year. Occasionally, like all others, it is winter-killed.

The PRESIDENT.—Is it protected by a fence where the snow banks up?

Mr. BEALL.—No; I have no interior fence, but we always have plenty of snow about Lindsay, which makes a difference, no doubt.

Mr. DEMPSEY.—I have seen Brinckle's Orange grown for a number of years in the city of Belleville, and they were perfectly hardy, but they were planted on the north side of a fence—not a tight fence, but a high picket fence—and I never knew any of them to be frozen. There has been a border of Brinckle's Orange raspberries there for ten or fifteen years.

Mr. F. MOYER.—I am growing a good many both of the old and the new varieties, and most of them are thriving this year. I am glad to hear Mr. Dempsey speak so highly of the Mammoth Cluster. Those of some of my neighbours appear to be blighted, but mine are full of fruit. The Gregg stands pretty well with me. The Doolittle, I think, is the hardiest I have had so far, and a good bearer. The Golden Thornless is deficient in flavour, but sells as readily as the blacks; and so long as people want them and I can sell them I will grow them. The Cuthbert succeeded well last year, but during the last winter the tips got frozen down about six inches, and I think I have lost half the fruit. A few years ago I thought a good deal of the Reliance, but last year the rust came along and spoiled the plants. I have not heard anybody speak of the Franconia. I saw a large quantity of the berries one time in Toronto when they brought a high price. I have a row of bushes 300 feet long. The Franconia is a good bearer, but I think it was September before I got any berries ripe. Last year I had a good crop, but this summer I expect to get only about half a crop. The Philadelphia is a splendid bearer. The Clarke is not a heavy bearer, but is a healthy plant and a fair cropper. I have one plant of the Hansell that has spread so much that I think I could supply about 500 people with plants this fall. The Turner produces very nice fruit.

Mr. DEMPSEY.—The Doolittle is a very fine berry, but the girls object to picking it because they get their fingers scratched. But with the Mammoth Cluster there is no difficulty.

Mr. GOLDIE.—The only varieties I have at present are the Philadelphia and Brinckle's Orange. I am a little surprised at the favour shown to the Philadelphia, because I understood that it was considered a very second-rate berry. I find it perfectly hardy and a very fair cropper, only the fruit is rather small; so that my favourite is Brinckle's Orange. Anybody who begins to grow that variety, even if it involves the trouble of taking down the canes and covering them with soil every fall, will not readily give it up. I think the



excellence of the fruit will repay you for all the trouble. It is a good cropper and the berry is fine and large, and of excellent quality.

Mr. BUCKE.—We do not grow a great many raspberries in Ottawa, and we find it necessary to protect them. Of course you cannot do that when you plant large quantities, as Mr. Smith does, but it always pays to grow raspberries in your garden. We protect our canes in winter by binding them down with scantling before the frost comes, so that they will remain under the snow. With us the raspberry pays better than the strawberry. Although the wild ones come in in enormous quantities, still the ladies want the tame ones so that they may have something nice and fresh for the table. The raspberry is one of the best paying crops we have in Ottawa.

Mr. CROIL.—The Philadelphia is always strong and healthy. It is the hardiest variety we have, and a first-class bearer.

The PRESIDENT.—I quite concur in what Mr. Croil says as to the hardiness of the Philadelphia. I was surprised also to hear Mr. Smith say that the Gregg was not hardy in Niagara. I have not seen any evidence of winter-killing in it or in the Cuthbert. The Cuthbert, it seems to me, has not the credit for bearing that it deserves. I think it a very good bearer, and if you take into account the quantity that can be picked from a patch during the fruiting season, I think the product of the Cuthbert will fall very little short of that of the Philadelphia, and the fruit is very much to be preferred in size and flavour.

Mr. DEMPSEY.—What variety do you find best for canning?

The PRESIDENT.—There are none grown in our neighbourhood for canning. In my house the seedlings known as Saunders' Seedlings are preferred for this purpose. But most of the raspberries are consumed as they mature. A good deal has been said to-day about the Golden Thornless. I must say it is not a berry that I care much for, but I have observed that when I have visitors the moment they see them they exclaim: "What beautiful yellow berries!" and I do not like to put people out of humour with anything they like, especially when they leave the better berries for me.

Mr. HILBORN.—We find the Turner a little harder than the Philadelphia. Shaffer's Colossal with us is not very productive.

Mr. LITTLE.—Another variety I forgot to mention is the Ohio, which is rapidly coming into prominence. Two years ago I got some plants and this year they are a marvel. I nipped them back when they were two feet high and to-day each plant covers about four feet of space. With regard to the Gregg, which is lauded so highly, I don't want to turn against it any gentlemen who favour it, but the truth is it is a very tender plant, and you will get more satisfaction and realize more money from a crop of these four—the Tyler, the Souhegan, the Hopkins and the Ohio—than from any other varieties.

Mr. DEMPSEY.—The question of canning berries is a matter that should not be lost sight of in considering the most profitable varieties. About four years ago we put up a few of every variety of strawberry and raspberry we had in Canada, and when we came to use them we found that the Philadelphia was superior to every other variety of raspberry we had. Previous to that the Turner and the Clark brought the highest prices in the market, but within the last two years there has been more demand for the Philadelphia for canning for winter use than for any other variety. The Turner and the Reliance are both good canning berries, but there is an acidity in the Philadelphia which the others do not possess. We evaporate black caps by placing them on sieves and setting them for about a week in a loft where the air will circulate. We put them in paper bags and throw them aside until we want to use them. Then we just put them in cold water for a while, and when they are taken out you would hardly distinguish them from raspberries just picked from the vine.

Mr. BEADLE.—Have you canned any of Saunders' seedlings?

Mr. DENTON.—Yes, and they are a very superior berry when canned. We have not evaporated any of them. I have no hesitation in saying that the best raspberries I have ever had on my table were Saunders' seedlings, and for canning I believe they will pay well, as some of them are very prolific.

Mr. BUCKE.—I would ask Mr. Dempsey if he sells the fruit canned, or does he sell it for canning?

Mr. DEMPSEY.—I sell it for canning. In conversation with our fruit growers around London, I learn that they regard the Philadelphia as the best and the Turner as the next best for market purposes.

Mr. HENDRY.—Eight years ago I commenced by planting the Philadelphia, and the same roots are bearing now. For eight years consecutively I have never lost a crop. The greatest fault in the Philadelphia is that it sets entirely too much fruit to ripen. It might ripen more if we kept the plant well moistened; but our dry summer is against it. Independent of that fault the Philadelphia bears well, and it is, in my opinion, the best raspberry we have in this neighbourhood for canning purposes. For the table I don't think it is equal to the Cuthbert. My Cuthberts the winter before last were winter-killed. The Reliance I grew for a year or two with some satisfaction, but last year the canes did not grow more than a foot and a half to two feet high, and the stems were quite spotted all the way up as if there was some disease attacking them. Previous to that the vines used to grow four or five feet. The berries were large and rather better flavoured than those of the Philadelphia, and you could fill a basket with them in about two-thirds the time you would with the Philadelphias. This year the vines are growing well; they have already attained a growth greater than the diseased ones had attained at the end of last season. My impression is that with the Philadelphia for a general crop, and the Cuthbert for a special crop, we have as good a selection as we can get. I have several other varieties—the Souhegan, the Hansell, the Brandywine, etc. I do not think much of the Brandywine; it is a very dry berry. I have always had Brinckle's Orange, and I regard it as a very fine berry. The Caroline I have also tried, and I think very little of it. It is hardy, but the moment you pick it it crumbles.

### PRUNING FRUIT TREES.

"The best time to prune fruit trees" was the next subject announced.

Mr. DEMPSEY.—The time to prune fruit trees is when the knife is sharp. That is my general rule; but there are about from six to eight weeks that we never prune, that is when the sap is rising in the tree in the spring. This period varies, but it ranges from about the first of March to the Middle of May, and just as soon as you discover that the sap has reached the branches you cease. All pruning depends on the object you have in view. If we want to encourage the growth of a tree we invariably prune it in winter. If we wish to increase the fruit buds we prune in the summer. Thus, we prune for about ten months in the year.

Mr. GOTT.—What tools do you use in pruning, and do you apply any kind of covering to the wounds?

Mr. DEMPSEY.—We avoid as much as possible cutting large branches. In winter pruning it is invariably small branches only that we cut, from the fact that we mostly cut the smaller trees in order to encourage the growth of wood, but in summer we sometimes prune large branches and to those we apply a little grafting wax. Some people use a preparation of shellac. The implements we use are shears, a pruning knife, and a very fine saw. It is very desirable to have the shears sharp so that they will make a clean cut.

Mr. GOLDIE.—In pruning in summer to retard the growth of wood, would it not answer to cut a portion of the roots? I find that when I cut a large branch in summer it invariably leads to the death of the tree.

Mr. DEMPSEY.—I have never observed that danger except when we cut the limbs during the two months I spoke of when the sap is rising. But that is the only time I apprehend danger from pruning. Anything that will check the growth of the tree will encourage the production of fruit. English fruit-growers sometimes tie down branches and reverse their growth with this object.

Mr. CROIL.—I have always found, like Mr. Goldie, that the cutting off of a large limb so hastens the death of a tree that I have hesitated and wondered whether it was not better to leave the limb on the tree.

Mr. DEMPSEY.—That suggests another point that we should observe in pruning. Two branches form a fork on a tree. The top branch is perhaps the smaller of the two and that is the one we wish to remove; but we ought invariably to remove the lower one.



because if we cut the upper branch it will be almost impossible to prevent water getting into the stub and so destroying the tree. On the other hand, if we cut the under branch, the upper one is encouraged to grow and protect the wound, so that no water can penetrate it and it heals rapidly.

MR. GOTT.—I think that the lighter the pruning the better. We like to prune the tree from its infancy, so that there shall be no necessity to cut off large branches; we prefer thumb and finger pruning—the removal of little twigs which the plant does not miss. But this very severe pruning we think is objectionable.

MR. WRIGHT.—In our district we are obliged to prune, very often at the very time that Mr. Dempsey says we ought not to do it. In the spring of the year, just as soon as the sap begins to move, I go round with a saw to remove any branches that have been killed. I examine every row, one after another, looking below for borers, and looking at the top of the trees to see if any young branches are starting that are likely to be injurious, and remove them with my thumb and finger or with a sharp knife. I do this in the spring of the year, and I never find it necessary to saw off any large branches at all.

MR. BEADLE.—I presume that all our fruit-growers will agree to this maxim, that in our climate especially it is desirable to prune a tree gradually as it grows, from the time that it is first planted out, so that there may be no necessity for cutting off large branches after the tree has grown. The removal of large branches in our climate is very apt to be injurious to the tree, even when the wounds are covered with shellac or grafting wax. You may not succeed in getting a large wound healed before decay sets in, and when that once appears, it cannot be arrested until it produces disease and death. No invariable rule can be laid down on the subject. You would not, for instance, adopt the same mode for the Northern Spy as for the Rhode Island Greening. You have to study the habits of each tree; and adapt your pruning to its style of growth. But it is wise to follow the rule that has been laid down, namely, to do your pruning while the twigs are small. Do it in the early spring and in the early summer when you find a shoot coming out where it ought not to grow. Let the branches be kept sufficiently far apart to admit of the full circulation of air and light, not too dense or too thick. I think I have seen orchards more injured in our part of the country by injudicious pruning than they would have been if left entirely neglected. I have seen beautiful young orchards, which to day ought to be bearing splendid crops of fruit, actually ruined by the owner attempting to force the trees into a certain form which he had fancied, and cutting away until each tree consisted of great, long, bare limbs, with a few twigs and leaves. The tree needs to be covered with foliage all the way down to the main trunk. This will keep it in a healthy condition, and so long as you do not allow the branches to crowd so as to shut out air and light, you will get plenty of good fruit. If the foliage is allowed to become too dense, the fruit will be obliged to grow and ripen in the shade and will be deficient in flavour. This is especially the case with the Northern Spy, which must have air and light to enable it to develop its flavour properly. The same rule will apply to pear, peach, plum and cherry trees, although it should never be forgotten that your mode of pruning should be varied to suit the habits and style of growth of each tree. The cherry tree, for instance, is one that requires very little pruning. I doubt if you ever need to use a saw or a knife to the cherry tree; you can do all the pruning it requires with your finger and thumb—just keep in mind that the less wounding you give a tree the better.

MR. HENDRY.—For nearly thirty years past I have been engaged in the growth of trees in a small way, and this subject has always been one of great interest to me. The remarks made by our worthy Secretary meet my views exactly. The proper time for pruning, I am satisfied, is a very important consideration. To prune a tree in the winter time, I am aware, brings out a very large growth in the incoming season. To prune it late in the fall is somewhat dangerous, as the frost may come before there is sufficient growth to heal the wound, consequently I have done very little pruning in the fall. I prefer to do it in the winter or the very early spring, especially in the case of young trees, whose growth I wish to promote. By winter pruning we gain in the wood of the tree; by fall pruning we gain the fruit. The pruning in this neighbourhood has been in my opinion, utterly ruinous to the trees. I call it “slashing,” cutting down everything that is not as big as the trunk itself. The result is that the trees are stripped of their foliage,



leaving only a few long branches with a bunch of foliage at the end of each. My object in pruning has been to trim the edge of the tree so as to admit the sun; but much of the pruning I have seen has evidently been done on the hypothesis that the sun comes from below. I have trained my trees down, pruning from the top downwards, so that they are low, with the branches wide-spreading and in layers one above the other. I am satisfied from my own experience, that with proper care and attention we could have from all, or almost all, of our apple trees, a fair crop every year instead of every two years. I have always claimed that our trees have altogether too little foliage. It is just as necessary that a tree should be fed through the medium of leaves, as that we should have fresh air to purify the blood that passes through our lungs; and if you deprive a large apple tree of its foliage, you certainly interfere with its growth. My pruning is done with a very fine saw, about as wide as my little finger, thin at the back and a little thicker at the teeth. When I wish to prune a little limb that I cannot reach well with the knife, the saw does the job very neatly without injuring any other limb. I leave all the little points that I can near the trunk of the tree. Those growing inwards and upwards I almost invariably cut away, else the tree is liable to be overloaded with fruit. I am just as careful of a little twig as I am of the point of a branch. The point of a branch will grow again, but when you denude a tree at the centre, where the best fruit grows, it is very difficult to reclothe it again. My care has always been to get the tree as nearly balanced as possible. The fruit grown on the upper side of a limb is much more likely to fall off than that grown on the under side or where the twigs come out from the trunk. June is my month for pruning, when the leaves are a little grown and the fruit just formed. Then it is easy to relive the tree of some of its superabundant weight of foliage.

Mr. DEMPSEY.—Mr. Thomas Rivers recommends pruning to be done invariably in the month of September, and he recommends root pruning as well as top pruning. In my first experiment of Thomas Rivers' system, I killed the tree. The next time, after reading it again, my experiment was a perfect success. In root pruning in the month of September, you must be careful to remove the foliage, and you will avoid all trouble. I found that this gave me a splendid growth the following season, and some of the finest samples of fruit I ever grew. There is so much to be said on this subject of pruning that we cannot compass it in one or two hours' discussion—we should require a week.

Mr. BUCKE.—If you prune the roots say three feet from the base of the tree, making a trench around the tree, and fill the cavity with fine, rich earth, you will find that the next season there will be a growth of small fibrous roots, which will be very beneficial to the health of the tree.

Mr. HICKLING.—My experience is that June or July is a very good time for pruning, either by pinching, as we call it, or cutting off limbs. But for large trees I think February is, on the whole, the best time. The plum trees and cherry trees especially, this season, since the buds came out, give evidence of the benefits of pruning at that time. They seem to have obtained greater growth and vigour, and to be likely to produce a larger amount of fruit. The trees are now well loaded with fruit.

#### THE AUTUMN MEETING.

The President here announced that the Directors had decided that the Autumn meeting of the Association would be held at Barrie on Wednesday and Thursday, the 1st and 2nd of October next.

#### THE CURCULIO.

Mr. BEADLE.—I move that the President be requested to answer this question by Mr. Leslie: What does the curculio (imago state) feed upon? Will spraying the plum with Paris green be of benefit?

The PRESIDENT.—The curculio in the perfect state does not eat very much. In fact, there are very few insects that eat much in the perfect state. Of course, there are exceptions, such as the potato beetle. But there are some insects which do not eat any-

thing at all in the perfect state, for they have no mouths. Their only purpose is to perpetuate their species. However, the curculio lives longer than many insects, and it does feed. This year I learned a fact about the curculio which has never been observed before. In collecting moths, those interested in insects very often put sugar or molasses on the trunks of trees, and then visit the trees at night with a dark lantern to secure specimens. Beginning that work early this season, I was surprised one evening just after dark to find two specimens of the curculio feeding on the sweets. This is a habit I never noticed before. I caught one of them and found that it was a genuine plum curculio. I know that the curculio feeds on green plums, and eats holes in them; but it eats very little, and for that reason it is very difficult to say why Paris green sprayed on the trees seems to be of so much benefit. We are not yet in a position to say how much benefit it is; but I have tried it myself, and I am quite satisfied it is a benefit. It seems to prevent the curculios from depositing their eggs on the trees so treated. By syringing the plum trees with Paris green in the proportion of a tea spoonful to a pailful of water about the time the curculio deposits its eggs we can save the crop to a considerable extent. I would like Mr. Beall to give his experience on this subject, as he has used this remedy more than I have.

Mr. BEALL.—I have used Paris green on plum trees for three years past, and I am satisfied that it prevents the curculio from doing mischief to a great extent. I cannot tell how it does. Last year I had two trees standing side by side, and I thoroughly syringed one and not the other in order to test the effect of Paris green. I gave the same tree a second dose about a week afterwards. The result was that the tree to which I had applied the Paris green was almost entirely free from curculios, probably not one plum in a hundred being affected, while the fruit on the other tree was nearly all destroyed. The year previous I had treated the other tree in the same way, but not so thoroughly. I only applied the Paris green once; yet that tree appeared to have a considerable advantage over the other, but not nearly so much as the one which had the second dose. I applied it just when the blossom was dropping, and then again about a week or ten days afterwards.

Mr. ALLAN.—I have used Paris green for the curculio since 1878, and the caution I would give is not to use too much. It is a rather dangerous thing to sprinkle around the trees in large quantities—dangerous to the trees. A tea spoonful of Paris green well mixed in a large bucketful of water, will spray from six to ten trees, according to size. In a dry season like this I fancy one spraying would be quite sufficient. If there comes a heavy rain shower it might be well, perhaps, to repeat the dose. I have found this treatment to be quite efficient. In a large orchard of a thousand plum trees we sprayed every plum tree except four, which we purposely left at different points in the orchard. On these four trees the fruit set very well, but when we came to pick it there was scarcely a whole plum to be found; they were stung right and left, whereas on the other trees all around them the crop was completely saved. I use a fine force pump for spraying.

Mr. CROIL.—I can quite appreciate what Mr. Allan says about not giving the trees too strong a dose. I have tried arsenic, which I saw recommended in the Iowa Horticultural Society's Report for the destruction of all insects. The arsenic was to be mixed in water in the proportion of one pound to 200 gallons. I think I applied too much, for I killed the trees entirely. But I believe it will kill all worms (laughter); it is claimed that it will not leave a canker-worm, a codlin-worm, or a tent caterpillar.

The PRESIDENT.—Did the arsenic dissolve?

Mr. CROIL.—I boiled it. I took about  $2\frac{1}{2}$  ounces to 30 gallons of water.

The PRESIDENT.—That is an advantage that the Paris green has over the arsenic—that it is insoluble. There is no doubt that the insects which eat the poison die from the effects of it; but the point we have been discussing is, do the curculios eat enough of the green plums when they are sprayed with Paris green to be killed by them? I think it is evident from Mr. Allan's experience that they do not. If the curculios had been killed by the Paris green there would not have been enough left to destroy the fruit of those four trees. The influence of Paris green must be accounted for in some other way.

Mr. ALLAN.—That was the conclusion I myself came to. I thought it was possible that the curculios were driven away by some odour in the Paris green which we do not



observe. One time, however, I did think I noticed them feeding upon some fine, gummy substance on the leaf and the fruit, for I noticed them travel over the plum and the leaf, and remain for a moment at spots here and there.

At about 12.30 the Association took recess until 2 o'clock, and on resuming, the question of "New Varieties of Blackberries" was taken up for discussion.

## NEW VARIETIES OF BLACKBERRIES.

Mr. LITTLE.—I got the Early Harvest, but it has been completely killed down every winter. The next I got was the Western Triumph. It was quite successful, and showed a full crop of berries. The Agawam is as fine a variety as you can have for home use; how it will ship I cannot tell you. It is a berry that is sweet to the core. Stone's Hardy will stand the winters, but I have not fruited it yet. The Snyder I have had for three years. It is tender, and is occasionally winter-killed, and the fruit is not very large. In a market fruit of any kind you require something attractive to the eye. The Agawam is good for size, though not so large as the Kittatinny. But the Kittatinny will not stand the winter as well as Wilson's Early, and I have discarded it.

Mr. MITCHELL.—I have had a little experience of the Wachusett's Thornless. I think little of it: the berries are small, and it is not altogether thornless either. I was given to understand that it was a very hardy variety, and I thought I would test it thoroughly. So I planted the bushes at the north-east side of my stable, where they were much exposed to the wind, and did not cover them in any way; but they all came through the winter green to the tips. The variety has that good quality, that it is hardy. With me the Wilson is very tender, having been killed to the ground. The Kittatinny is even less hardy than the Wilson; yet for the amateur I would give the Kittatinny the preference over every other.

Mr. GOLDIE.—The Kittatinny is the only variety I have ever tried. I got it when it first came out, and grew it for a few years; but it was so killed down and produced so very little fruit that I discarded it. I think that probably the ground I grew it in was too strong and succulent, and the vines were so stiff and strong that I could not bind them down to protect them.

Mr. MOYER.—I cannot say much about the blackberry, as I have just begun to cultivate it. A year ago last spring, I got Wilson's Early, the Crystal White, the Texas Hybrid, Taylor's Prolific, the Snyder, and Stone's Hardy. All of them, except Stone's Hardy, have been frozen down to the snow-line; but it is healthy although it has received no protection. I cannot speak of the fruit yet.

Mr. BEADLE.—I would not advise our friends to trouble themselves much about the Crystal White. I have tried it thoroughly. The plant itself is not healthy; it won't stand anything, either summer or winter. It seems to succumb to every possible disease that blackberries are subject to, and this spring I turned the whole of it under. The fruit is not crystal white by a long way; there is no crystal about it; it has a very dirty, smutty look. In fact, there is no good quality in it that I know of to recommend it. I have not tried the Texas Hybrid. I look upon it as a humbug, and I never took the pains to get it.

Mr. J. Y. SHANTZ.—I only grow one variety, the Snyder. It seems to stand the climate very well, but has fruited very little. The berries are not very large, and are slightly acid.

Mr. BEADLE.—Has anyone tried Taylor's Prolific?

Mr. WRIGHT.—I have tried it, but, like every other variety of blackberry I have tried, it has died down in our climate. I have given up the hope of doing anything with the garden varieties, and now I have taken to the woods, to see what I can do with the wild ones.

Mr. HENDRY.—Amongst others, I ordered the Snyder and the Taylor; but, instead of getting the Taylor, I was sent the Kittatinny. It grew a little while and then died



down. Last summer it grew pretty well, but this spring the canes were all killed. They have since started again, but I don't think I will get any fruit. The Snyder is doing pretty well, and, though the quality of the fruit is not everything one could wish, when left on the bush until it is really ripe, it is a pretty fair fruit. The bushes this year have not died down at all, and now show a good prospect of a good crop.

Mr. GOTT.—One of the best berries is the old Kittatinny. I think we have nothing of equal value among newer varieties. The Snyder is considered to be very valuable. Its bearing qualities are good, it is perfectly hardy in our section, and the crop of fruit is enormous. The berry is not so large as that of the Kittatinny, but it makes a very fine basket of fruit.

Mr. GEDDES.—I have not cultivated blackberries very extensively. All I have tried to grow are the Wilsons I got from the Fruit Growers' Association some years ago, and I have no fault to find with them. The plant is soft and tender, it is true; but I have had a lot of fine fruit year after year. Unless you give them care, the bushes will run all over your place, but if you attend to them properly, they will repay you for all the attention you give them.

The PRESIDENT.—About London I find the Wilson quite tender; it kills down regularly. The Kittatinny is also tender, but not quite so much so as the Wilson. But a gentleman living outside of London on a northern slope, who got a plant from the Fruit Growers' Association at the same time that I did, is able to raise berries every year to bring to market. This success I cannot explain, for he does not protect his plants. It must be something in his soil or location that is favourable to the hardening of the wood to carry it through the winter. The Snyder I have grown for two years, and I find it to be quite hardy, but the fruit is not equal to that of the Wilson. Still, if that is the best we can get of the hardy varieties, I suppose we shall have to be content with it.

The PRESIDENT then announced the remaining subjects for discussion, and suggested that, as there would not be time for them all, the Association should select one or two.

It was decided to take up grapes and roses.

## GRAPES.

The subject of "Grapes, the best varieties, pruning and training," was then opened for discussion.

Mr. S. SHANTZ.—We always have a few grapes, but, owing to winter-killing, we obtain very little fruit. We have the Concord, the Isabella, the Delaware, which is a very slow grower, and the Champion.

Mr. MITCHELL.—I grow nearly all the staple varieties, and I find that all, even the Concord, are better if laid down every year before winter; they do not even require to be covered, if you only lay them on the ground they will come through all right in the spring. The hardiest varieties like the Concord and the Hartford will not make so good a start or grow so freely if left standing, even if they are not killed. The Delaware, although small, is one of the very best, and I think Mr. Shantz will find the objection as to slow growth removed after a year or two when the vine gets properly rooted. I left my grapes on the trellises, and I lost all except an occasional bunch. Some of Rogers' grapes are excellent, but very subject to mildew.

Mr. WRIGHT.—In our section grape growing is yet in its infancy, and the last two seasons have been so unfavourable for ripening that I cannot speak very positively with respect to the several varieties we have tried. With us the cold-resisting qualities of the vine are not so important as early ripening, because it is absolutely necessary for us to cover every vine we have. Among our successful varieties I must place the Champion first. It is not of very fine quality, it is true, but it has a good colour, and where you cannot get anything better, it is a passable grape. The Hartford ripens early and ripens every year, though the greatest objection to it is that it falls from the cluster. The Delaware, for some reason or other, I have never yet been able to grow. With others, however, in our locality it has succeeded; we have had it on our tables at local exhibitions, fully ripe, too. The Concord grows well with us, and ripens in ordinary seasons. It did

not ripen last season or the season before, but they were exceptional. The Agawam ripens and is a fine large grape and sells well. The Lady, which has been condemned in the *Horticulturist*, grows successfully in our neighbourhood. The Martha, too, has been on my table, fully ripe. Several other varieties have been lately introduced, and whether they will ripen I am not yet able to say.

Mr. MITCHELL.—I wish particularly to recommend one grape which I overlooked just now, the Worden. It is very hardy and well flavoured, better than the Concord, and ripens a week or ten days earlier.

Mr. WRIGHT.—I have the Worden, and I expect to fruit it this year for the first time.

Mr. GOTT.—The Martha is a good white grape, and the Lady, as we have fruited it on our grounds, is something excellent. The fruit is almost transparent, and has a very fine flavour. The Delaware has still a high reputation, and is always in good demand in the market. Among the varieties of Rogers', No. 9 and No. 19 are good and profitable. Another red grape, the Brighton, is a superior variety; its flavour is excellent, and the bunches are attractive. Amongst the black ones the Concord remains the leader, either for family use or for market. The Champion is not very much grown; Rogers' No. 43 and 44 are both excellent varieties. Moore's Early and the Worden we find well spoken of. We find that our grapes are becoming more subject to disease than formerly. The principal troubles are mildew and a kind of dry rot that attacks the berry. These blights are so disastrous that last season our crops were almost entirely destroyed. This season, in accordance with a suggestion our President made in the *Horticulturist*, we have tried sulphur, distributing it amongst the vines and over the leaves. We think this substance will likely counteract this disease, and if it does, it will be a great advantage to us.

Mr. HENDRY.—I have been able to do very little in grape culture. I have bound down the vines and tried every plan I could think of to save them from winter-killing, but it seems entirely useless. The only varieties I can grow are the Champion and the Delaware.

Mr. COPELAND.—My experience corroborates that of Mr. Hendry. I have had the vines frozen in June and September as well as in winter, and I have given up the attempt; I don't think it is worth my while bothering with them.

Mr. MOYER.—I am afraid I have to take the same line as the last two gentlemen. Ten years ago I started grape growing, and tried the Concords, and the vines are there yet, but I have never got a crop of grapes. I afterwards tried the Hartford Prolific, the Delaware, the Prentiss, the Worden and other varieties with the same result. The Champion I have been able to do better with, and I would recommend it. In fact, I have tried every variety that I thought hardy and early enough for our climate, but never succeeded in getting fruit. I have 150 plants which are all looking well, and I am going to persevere for some years more.

Mr. HILBORN.—The Concord, I believe, is the most satisfactory grape we have in our part of the country. The Martha is a good, hardy grape, but is rather small. These two and the Delaware are doing fairly well with us. None of the Rogers' varieties do well with us; we have never been able to obtain a crop of fruit; if the vines set a crop it drops off; so last fall we took out 150 plants.

Mr. S. SHANTZ.—In this neighbourhood some years ago there was considerable complaint about a bug that ate out the grape vine buds in the spring, and destroyed all chances of fruit for the season. Do you know anything about that?

The PRESIDENT.—I have had that matter brought to my notice very often, and I have been a little surprised to see how patiently people allow this bug to have its own way. It is called the grape-vine flea beetle, and it feeds on the buds as soon as they begin to swell. If the vines are syringed with Paris Green and water, it will kill these beetles. If you shake the vines over a pan of water with a little coal oil in it they will drop into that and die. Later on in the season they lay their eggs on the foliage of the vine. They may be found at that time in the form of little black larvæ, varying from a quarter to half an inch long, with six small black feet in front, and they eat portions of the centre of the leaves. These larvæ can be got rid of by syringing with hellebore and water, or Paris Green and water. If allowed to mature, they will drop to the ground,



take the chrysalis form and appear in the fall as beetles. Then they will hide during the winter, until the spring gives them a chance to get at the grape vine buds again.

Mr. GOTT.—Is black the prevailing colour of this larva?

The PRESIDENT.—Yes.

Mr. GOTT.—Some of ours are brown.

The PRESIDENT.—They shed their skins several times during their growth, and when they are first out of the old skin, before the new skin gets its ordinary colour, they have a brownish hue. But they are generally described as black larvæ.

Mr. BEADLE.—I see that people up here think that the Champion grape will stand the climate and give them some grapes to eat, and perhaps they may find, as I did, that it is not an unprofitable market grape. I have twenty-two vines of that variety. A year ago last summer one of my men was going to Toronto, and he took the grapes from the Champion vines with him. When he came back he gave me \$72. I asked him, "Where did this come from?" He said, "From the Champion grapes; I paid my passage to Toronto and back, paid for picking the grapes, paid the freight, and I have this much money left." I thought that was doing pretty well with twenty-two vines; and I think if you people in this neighbourhood can do as well as that, you will be very well satisfied with the Champion.

Mr. HILBORN.—The Champion with us is of no value whatever. It does not ripen, but the fruit drops off.

The PRESIDENT.—I had the same experience with my Champions last year, but I thought it was exceptional. Have you observed that more than one year?

Mr. HILBORN.—Yes, for three years.

The PRESIDENT.—I should be sorry to be limited to the Champion in such case. I should want to import all the grapes I wished to eat, as I think the Champion is a very inferior grape. About London we can grow quite a number of different grapes. The Concord is one of our principal varieties, but for my own taste I am rather partial to the Clinton. It is sometimes despised, like the Wilson strawberry, but to those who like pleasantly acid fruits there is nothing nicer than a well ripened Clinton. It is about the only grape worth canning or preserving, as it possesses that amount of acid which is required to make canned fruits acceptable. The Martha is well received. We also grow the Rebecca; but it is a poor grower, and the bunches are small, and you have to wait a long time before you get much for your trouble. Some of the Rogers' varieties succeed very well—No. 4, No. 9, No. 3, and No. 19; but the Salem has been a failure for a number of years. The mildew attacks the vines, and what it does not destroy, the rot carries off. I have tried the Brighton, and it succeeds very well indeed. I think I have nearly all the new white varieties, but I have not fruited either the Pocklington or the Prentiss. I have the Lady, but have not fruited it yet. The Hartford Prolific I do not care much for and have several times determined to root it up; but last year, which was a very poor year for grapes, I was very glad I had the Hartford Prolific, as it was the only grape that gave us any fruit. I have had some trouble in my vineyard from the phylloxera, especially on my Concord. They are now turning quite yellow from the attacks of this pest. I hope it is not going to spread to any great extent. If it does, it will be a very difficult thing to deal with.

Mr. BEALL.—I am glad to hear you commend the Clinton. In my opinion it is a most excellent grape when ripened. I would like to have your opinion of the Chippewa.

The PRESIDENT.—I have it, but it has not fruited yet.

Mr. BEALL.—I think you will like it better even than the Clinton. It ripens early, grows well in the bunch, and possesses great uniformity of flavour.

Mr. BEADLE.—Did you get your Chippewa vines from W. H. Read, of Port Dalhousie?

Mr. BEALL.—No, I got them from a neighbour who got them from Mr. Leslie. I believe Mr. Leslie gave up selling them because he found that in many places they were attacked by mildew. I have had these vines for twelve years, and I never was troubled with mildew until last year or the year before. The berry is about one-third larger than that of the Clinton.

Mr. BEADLE.—I asked Mr. Beall where he got the Chippewa vine, because I think



he and I are thinking of two different plants. The Chippewa grape vine that Mr. Read had was a wilding that he found growing on the banks of the Chippewa Creek, and he called the grape by that name; but it does not correspond to Mr. Beall's description at all. It is no larger than the Clinton grape, and the bunch is not so large as that of the Clinton. It is also harsher in quality; and unless for producing colouring matter, because it is very dark, I cannot think the Chippewa is good for anything. I merely mention this to put people on their guard against the grape I know as the Chippewa.

The PRESIDENT.—Mr. Beall's description corresponds with that of a variety called the Janesville, and that may be the grape he speaks of.

Mr. BEALL.—Mr. Leslie says he remembers the grape, and he is perfectly satisfied it is the Chippewa.

Mr. CROIL.—I am glad to hear the Clinton well spoken of. I used to think the Clinton was good for nothing but to make wine of; but I have changed my mind. I do not cover the vines and do not find it necessary to do so.

Mr. BEADLE.—The Clinton is the best grape for cooking purposes that I know of; and I want to tell you something about the Clinton grapes that you should get some of your good wives to try. When they are thoroughly ripe, put them into a vessel and heat them slightly. Then take them, and pop the pulps out, throwing them into one dish and the skins into another. Then put the pulp into a kettle, and heat it sufficiently to liquify it, so that it can be run through a cullender and the seeds taken out. Then mix the skins with the pulp, and put away. Sweetened to the taste, it makes one of the most delightful dishes for winter use that I know.

Mr. DEMPSEY.—I like the Worden grape as an early grape. The fruit is large, and of good flavour, but it has the fault of most of that class of grapes, that of shedding its fruit from the bunch when it is very ripe. The Concord, the Beaconsfield, or the Champion, all to a certain extent do the same. But the Beaconsfield if only fit to eat, I would grow in preference to any other variety. It comes early, and people will buy it. The Brighton pays well; with good soil and good culture it is very prolific, and it is quite popular for table use. In my opinion, it is fully equal in flavour to the Delaware. You must not, however, undertake to keep it for any length of time after picking it, for it loses its flavour very soon after coming to maturity. There is nothing that I know of equal to the Delaware for retaining its good qualities. It also weighs well, sells well, and always commands a high price in the market. I have some new varieties that appear to be succeeding, but I cannot speak very favourably of them. I have some of my own, and some of Saunders' which I have not fruited yet. For home use, I use my No. 5. It is a red grape, resembling Rogers' No. 3, but it is a little earlier. They tell me in Quebec that it is a little earlier than the Champion, and I hope it is going to be a good grape for our northern climate. I have not propagated it, however. The Iona is a profitable grape; it produces a fine bunch and a good sized berry, the flavour of which is all we could ask, but it is rather late. It does not mature more than one year in five in our neighbourhood. What we want is something that will ripen every year. Anything later than the Concord it is of little use for us to cultivate. If I were going to plant another vineyard, I should plant largely of the Delaware, some Champions, owing to their earliness, and Rogers' No. 3, No. 4, and No. 9. These are the only numbers of Rogers' that I should care for; the others show indications of mildew, and some fail entirely, as No. 34 and No. 19. No. 44 is doing pretty well yet; but the Salem is a perfect failure—I have not had a berry from it for five years. Rogers' No. 1 is too late for our climate. I would confine my collection to a very few varieties. The Rochester and the Monroe are very fine grapes for amateurs. Most of Rickett's do not come up to the specimens Mr. Rickett has been exhibiting. We have not fruited the Jefferson yet, but I have seen it fruited, and was disappointed with it. The Lady Washington is small and of no value. The Vergennes is a very profitable grape; it matures early, and gives very little trouble until spring.

Mr. GOTT.—I was sorry Mr. Dempsey did not tell us a little about the Burnet. I have fruited it myself, and the bunch is very fine, but it is liable to rot, and for that reason we have lost a large part of the crop. If I could save it from that, it would be very valuable. We have a red grape that we think a great deal of, called the Walter. The bunch is large and compact, and the berry of fine flavour.

The PRESIDENT.—Isn't it thick in the skin?

Mr. GOTT.—It is rather.

The PRESIDENT.—Hasn't it a "foxy" flavour?

Mr. GOTT.—Yes, but still it is a very good grape. We would like to hear from the Secretary about that new and promising white grape called Jessica.

Mr. BEADLE.—Mr. Dempsey said the Vergennes was an early grape. I have fruited it three years, and with me it is not so early as the Concord.

Mr. DEMPSEY.—It ripens with the Concord.

Mr. BEADLE.—I just wanted to avoid the impression getting abroad that it is an early grape. My crop of Concords will get ripe before it will. But still, it is a good keeping grape. A friend of mine kept it until February in very nice condition indeed. The stems had got dried, and the fruit was very fine; in fact, I thought the keeping process had improved its flavour. My friend Mr. Gott has asked about the Jessica. It will make its own record. The public have got it, and they will soon be able to speak of it.

The PRESIDENT.—With me the Burnet has fruited very well, and ripened well, though a little later than I expected. I would not call it a heavy bearer; its bunches are not so well set or so full as those of the Concord. The Iona, does not ripen with me one season in ten; but it is a delicious grape when ripe. As for the Walter, it is not a grape that takes my fancy.

Mr. BUCKE.—The Burnet is really one of the finest grapes we have. It grows heavy bunches, with short stems, and the fruit has an excellent flavour. Its only drawback is that it has some small seedless berries in the bunch; but otherwise it is a perfectly clean, healthy grape, and never mildews. I think, however, that the Brighton will be found to be the best general grape for amateur cultivation. It produces a very fine bunch, and it has this advantage, that its fruit is red, whereas the Burnet is black. Red grapes always command a better price in the market than black, and the whites are even preferred to the reds.

Mr. CROIL.—The reports of the Burnet are somewhat contradictory. Mr. Bucke says it is one of the best in his locality; I have no hesitation in saying it is one of the worst in ours.

Mr. DEMPSEY.—I was going to say something about the Burnet, but I obtained an account of its failure in so many parts of the country. There is no grape with a better flavour than the Burnet; but it has its faults. Sometimes the bunches are thin; but last year was one of the most unfavourable years for grape culture I have ever experienced, and the Burnet carried a heavier crop than any other variety we had—heavier than even the Concord; and the grapes are far superior to the Concord in flavour. It is true they suffered considerably from the frost, but they were about ripe when the frost came. They brought a high price in the market—20 cents a pound. But I would not advise any man to grow the Burnet grape until he knows how it will succeed in his locality, for it fails in many sections of the country.

Mr. GOLDIE.—I have heard nothing as to the best situation and soil for growing grapes. In planting the vines alongside of a fence, I have never been able to get them to fruit; the sun in the early spring seems to force the growth too rapidly. I believe they will succeed better if planted in an open space in a rather retentive soil, with no fences or trees near them. I should like to hear Mr. Dempsey's opinion as to the best location.

Mr. DEMPSEY.—We are growing grapes on the south side of the Bay of Quinté, on a northern descent, and last year they matured very well and set their fruit nicely. We also grow them on the opposite side of the bay, with a south-eastern exposure, and they ripened perfectly last year—Delawares, Concords, Wordens, Burnets, and some varieties that were later. If I were going to select a location for a vineyard I would take an open field, as nearly level as I could get it, where there is good drainage. I would prefer the side of a hill with a south-eastern exposure but for the expense of cultivation. I have never seen better grapes than some grown on shale soil by Mr. Graham, of New Edinburgh, near Ottawa. But we plant on sandy or clay or any other kind of soil, so long as the location is good.



## ROSES.

Mr. BEADLE was then requested to say a few words on the subject of "Roses, their Culture and Management." He said:—The best white rose, take it all in all, is, I think, the Madame Plantier. It is not a perpetual. We talk a great deal about perpetual roses, but after all there is very little perpetuality. The rose I speak of blooms once in the season. You will find it perfectly hardy, especially if you have snow enough to keep it covered, a double rose, and a very profuse bloomer. It is scented too, though not the highest scented rose we have. The Provence Rose, commonly called the Cabbage Rose, cannot be beat by any other rose of its colour. It is hardy, is very double, very sweet, has a bright rose colour, and is a very full bloomer. Perhaps I am somewhat partial to it, because it is one of the first roses I ever saw. It does not like a cold wet soil, but a warm dry one; bearing that in mind when planting it, you are sure to be pleased with it. Then, there is its companion, the common Moss Rose, which is just that same old Cabbage Rose covered with moss. You will remember the old fable about it, so prettily put into poetry that in order to add a new grace to the rose some kind-hearted fairy clad it with moss. It is one of the most difficult articles to buy. You may write to fifty nurserymen and fail to get it. It is a much prettier rose than the Princess Adelaide, a much more mossy rose; the whole stem is covered with moss. Another rose of that same class known as George the Fourth, a very rich coloured, dark-red rose, is one that I like very much. It is one of the hardy summer roses. There are two yellow roses that I should name, and it is well enough to have them both. Harrison's Yellow, which blossoms first, before all the roses, is semi-double, and of a light yellow colour. Following that is the Persian Yellow, which has a finer leaf, and a somewhat smaller flower in point of size than the Harrison, but it is more double and has a deeper yellow colour. It is perhaps of the two the prettier, but I think you should have them both, because the Harrison is about done by the time the Persian begins to open. Many persons are anxious to get climbing roses, and if you look at my article on the subject in the last *Horticulturist* you will find there all that I know upon it. I see some one has it that the Boursault Rose is a double. It is the hardest climber we have got. It is an Alpine Rose, and is called *Rosa Alpina*, having been found in the Alps. It is not usually found in the nurserymen's list, because people have been in the habit of turning up their noses at it, because it is only semi-double. It is not so handsome as the Queen of the Prairie, but it will grow where the Queen of the Prairie will not live. I mention it because I hope that some of our hybridizers, like Mr. Saunders or Mr. Dempsey, will take it in hand and see if they cannot bring it to be double in form. If I could get it as double as the Queen of the Prairie I would give \$500 for a stock of it. It is a very dark-red rose. It has no scent, and I do not know of a climbing rose that has any scent. They say that the Gem of the Prairie has some scent. It is a hybrid, however, and it has lost a good deal of its climbing property by being crossed. When you come to the Hardy Perpetual Roses, there is an army of them. Among them General Jacqueminot has been a great favourite. It is not the most double, but is one of the most brilliant and showy of its class, its colour being almost vermilion. Next to that perhaps I should mention the Xavier Olibo, or the Duc de Rohan. These two roses are very dark, almost velvety in their appearance. With me they kill badly almost every winter; but that does not matter much. The following spring they throw up shoots and bloom well. The John Hopper is perhaps the next best. It has the true rose colour, is very double, is a profuse bloomer, and blooms twice in the year more certainly than any other. In order to secure a good autumn bloom you should prune back the bushes vigorously as soon as the first bloom is done. La France is a beautiful rose; but you must be on your guard, for there have been two roses sent out under this name. One of them is a hybrid tea, and it is the only one I care about. It is one of the loveliest roses we have got, but it is tender and needs great protection. If you take it up in time, and put it in your cellar, and bring it out again in the spring you will derive great satisfaction from it. That is one of the strain that Mr. Bennett started in England. There are two or three others that he has sent out that are about equal to it, but none of them is any better. The Baroness Rothschild is one of the finest of the H. P. roses. It is rose coloured, with a peculiar satiny gloss and a finely cupped form.



None of these H. P. roses are quite hardy; they all kill back more or less; but that is not a very serious matter, for a little judicious pruning does wonders. I do not want so many flowers; so I prune back my roses to lessen the number of flowers, so that those I do get will be as near perfection in size and form as I can have them. The old La Reine is a very fine rose. It has this defect, however, in some places, that the buds do not open well; but that is only a minor fault. Then there is that class of ever-blooming roses which are tender. But every rose grower wants some of them. They can be taken up in the autumn, and put in the cellar, and just as soon as the weather becomes settled in the spring you can put them out, and they will begin to bloom just after they have begun to grow, and they will keep on blooming all the summer through. All of that class of roses too, or nearly all, are very deliciously scented. Some of them have a climbing habit like Marechal Niel, which created a sensation two or three years ago. It is one of the most beautiful roses we have, and is deliciously scented. But it can only be grown to perfection in the green-house, and it should not be pruned back too severely. I do not know that I need undertake to name all the roses of the ever-blooming class. You can hardly go amiss if you take up any nurseryman's catalogue; but you can vary according to your taste as to colour and scent. I prefer to select those that are scented. When you have a rose of good form and colour, and can get it scented, you have the perfection of roses. Now, I want to say something on the cultivation of roses. If you want good roses do not fail to feed your rose bushes. Keep the soil rich and well stirred up. Do not let the weeds get near them and in dry weather water them well in the evening—not when the sun is shining, and when you do water them keep on watering until the water gets down to the roots. If you only give them a light sprinkling you will attract the roots to the surface where they are liable to get burned out.

The PRESIDENT in closing the meeting said: On behalf of the Fruit Growers' Association of Ontario, I desire to thank the people of Berlin who were so kind as to invite us here, and who have been so courteous in their attentions to us, and have contributed so much of interest to our discussions. I also beg to tender an invitation to our friends to be present at the meeting to be held at Barrie on the first and second days of October.

Mr. ALEX. MILLER (Mayor of Berlin).—I beg on behalf of the Town of Berlin to express our gratification that the Association did us the honour to select Berlin as the place of their meeting. The proceedings have been of a most entertaining character, and it is only to be regretted that more of the people of this section of country have not availed themselves of the advantage of attending this meeting. If the Association should on any future occasion choose Berlin as their meeting place, I think I can promise them a larger attendance. I again express the thanks of this town for the honour you have done us.

The PRESIDENT.—I am glad to learn that the gratification is mutual. I am sure for our part, we shall be glad to come to Berlin again. We all know how difficult it is to induce farmers to come out in the busy season. If we come on a future occasion, I hope the attendance will be larger, for while those who attend greatly benefit us by the information they give us, they are also in turn benefited.

---

The following valuable paper prepared for the meeting was ordered to be printed in the annual report.

### SHALL I BUILD A GREEN-HOUSE?

BY JUDGE BOYS, BARRIE.

A short time ago when your worthy secretary requested me to make a contribution to the common fund of knowledge in some branch of horticulture by preparing a paper for this meeting, I at first considered that my answer must be a refusal, as my own knowledge and experience were too limited to afford any expectation of my being able to interest, much less instruct, such a body of men. Yet when I reflected upon the request, and considered what my little experience had taught me, I determined not to say no. The question in such cases seems to be not so much as to what a person can teach the few experienced members, but what experience has taught me, which may be of use to

the average number of members of our society. Looking at your secretary's request in this light, I began to consider what questions in horticulture puzzled me a few years ago, and in which I had now some experience. Three occurred to me almost simultaneously. One was—Shall I build a green-house? The second was—Can I grow grapes and flowers together? And the third was—What are the best remedies for green-house pests? As I am not going to trespass on your good nature by taking up all these subjects, I have selected the first one mentioned for the subject of this paper.

A few years back I considered the time had come when I might venture to build myself a modest dwelling-house, and I was then much exercised with the question—Shall I also build a green-house? and if I could then have met with a friend who had been through the experience with regard to green-houses that I have since been through, I might have saved myself a great deal of trouble and expense, to say nothing of vexation and annoyance. Doubtless such a friend could have been found, but after some search I couldn't find him. Believing there are many persons now in the same position I was in then, I offer these observations for what they may think them worth. I do not write for the man of large means, for he is a law unto himself, and can afford to purchase experience. If he makes a mistake his money and his servants and gardeners are on hand to put things right, and loss of time is not usually of much consequence to him; but I write for the man of small means who loves flowers, and who, after building himself a moderate dwelling, feels he can spend a little more in a green-house, provided it is no great expense to him after it is built; and who is too poor to keep a gardener, yet has an hour or two to spare from business which he would like to devote to horticultural pursuits.

Such a man is supposed to have informed me that he is going to build a dwelling and to have asked me the question—Shall I also build a green-house?

I answer—If you can build your green-house attached to your dwelling, and can afford to build it, whether small or large, in thorough good shape, by all means build it. If, however, you cannot attach it to your house, or have to put up a make-shift kind of an affair, then I give you the advice which Punch gave to those about to get married—"don't."

In this cold, stormy climate, with numerous falls of snow each winter varying in depth from one inch to two feet, you may be assured that a green-house standing away from your dwelling will be a burden to you rather than a pleasure. To such a man as you are a green-house in summer is of little use—all the flowers you want can then be grown outside, and all the time you have to spare can be spent in the garden. It is when the weather gets too cold for flowers outside, and during the winter, when anything green is pleasant to look upon, that you want a green-house; and if you have to put on your hat and overshoes, and possibly an overcoat two or three times a day, and once or twice after dark to go and "fire up"; or if you take a fancy to pot a cutting, or admire a blooming flower, and have to shovel away two feet of snow for a hundred yards before you can do so, you will soon lose your taste for flowers, and your green-house will become a "cold frame." No, unless it can be placed against the house, or at least near enough to it to be reached by a covered passage, your green-house will be no source of pleasure to you. In fact nearly everything else should give place to having it open out from your dining-room, library or other room most commonly occupied during the day, and the upper half of the door should be of glass, so that when shut you can, while at meals or otherwise engaged at home, look up and catch a glimpse of green leaves or of flowers. With your green-house in this position no preparation is required before entering it. You can at any time, and in all weathers, go in bare-headed and with your slippers on. While waiting for breakfast or dinner, you can take a turn through it, or pot a flower, or water your plants, and thus turn to account many a moment which would be lost if your green-house stood out on the lawn away from the dwelling. The best aspect is on the south side of the house, and the green-house should run north and south. This will give the most sunlight, and at the same time afford the most shelter from the colder winds and hail storms. Or if you can afford a larger building than you care to run in one straight line from the south side of your house, first of all place a lean-to against that side, and run a T from the lean-to. Ten feet wide and twenty feet long would do very well for the lean-to, and



the T might be ten feet wide and fifteen or twenty feet long. This T should of course be opposite the door into the house, so that in looking from your room you would see a vista of plants and flowers. In placing your green-house in this position, you must not overlook the danger to your glass arising from snow and icicles falling from the roof of the house. This danger is reduced to a minimum on the south side, but is still great enough to require guarding against. If your house is to have a cottage roof, the whole length of the lean-to must be boarded over for six feet from the wall. If a gable end overhangs the green-house then only board over the portion of glass exposed. In the boarded part of the roof a movable section can be arranged to open and shut for ventilation. Two other movable sections should be made for the same purpose in the roof of the T, one on each side. There should be doors at each end of the lean-to so as to admit of ingress and egress to the green-house from the garden in front, or yard behind, without having to go through the dwelling-house. These doors will also be useful for ventilation in very hot weather.

The only objection I know of to placing a green-house in communication with your dwelling, is the one of smoking out the insects. These pests must be got rid of in some way, and tobacco smoke is a valuable insecticide, and it will penetrate all through your house to the disgust of every well regulated mind. The smell of stale tobacco will bring down what ought to be a first-class establishment, to a second or third rate one, as surely as a slovenly wife, or a drunken master. But by shutting your door as tight as you can, and by having a closely fitting movable batten-door, to fit on the outside of the frame, very little smoke need escape into the house. Besides, smoking out the insects is not absolutely necessary, as other means of getting rid of them can be adopted.

If you are a smoker there is an additional advantage in placing the green-house where I recommend. In winter-time it will always afford you a warm and agreeable place for a smoking room. Instead of annoying your wife, and giving your house a low-lived smell, if you are sufficiently master of the situation to smoke in your sitting room; or if you only play second fiddle, instead of being annoyed yourself by being relegated to the kitchen or some other uncomfortable place to do your smoking, you can at all times without any reasonable objection, retire among your flowers to consume the weed.

Next in importance to having the green-house attached to your dwelling, comes the question of building it in thorough good shape. By this is meant, complete and well done in every way. The foundation should be stone, otherwise your posts will rot after a few years and so will your sills, and the house will begin to settle, and probably unevenly, to the destruction of the glass. Besides, a stone foundation is warmer, a great consideration in this climate. If you can't command a good supply of water by water works, artesian well, windmill, or other better means, the whole foundation should be dug out and the stone work cemented, so as to form a tank under the floor, and thus supply an abundance of water ready at hand. If you have to be perpetually carrying water from any distance, your flowers will cost too much time and trouble to be a source of much pleasure to you. Every thing should be arranged with the view of saving your time and of giving as little trouble as possible, or, after the novelty of your green-house has passed away, you will weary of it. In this view the supply of water is very important. You must water your plants nearly every day, and in hot weather sometimes twice a day, and if the water is not ready at hand, the labour and time expended become burdensome. No reasonable expense therefore should be spared in obtaining an abundant supply of water flowing under pressure by merely turning the tap of your hose. I say then, if nothing better can be done, make a tank of ample dimensions under the floor, and place a force-pump therein. The plants can then be watered direct from the force-pump, or better still, you can force the water into a barrel elevated in one corner, and as required draw it off under pressure by means of a hose. This will enable you to give some plants more water than others, which is a necessary, but difficult thing to do, if the water is used direct from the pump, unless you get help and one person pumps, while the other manages the hose.

On your stone foundation build two feet of brick work, one brick thick at least. One and a half would be better, and on the brick work place four feet of perpendicular glass, and then the roof of glass. *All your glass must be doubled.* This adds materially to the expense, but I consider it an absolute necessity for an amateur gardener if he doesn't want



to get up some winter's morning and find all his plants ruined. Against the expense, however, there will be a saving in fuel. The inside glass should be made up in sashes that could be removed at will, so as to allow of cleaning both inside and outside glass, otherwise dirt will accumulate between the two and disfigure your green-house. The panes should not be very large, for breakages will occur, and a small pane is cheaper to replace than a large one. All the glass wants to be very carefully put in and anchored so as not to slide downwards when the putty is soft, or when it hardens and shrinks. Glaziers usually employ soft metal points for the sides of the glass, and a piece of tin shaped like an S set in the middle of each pane. The glazier's points are useless or nearly so for the purpose. When an accumulation of snow and ice on the roof begins to shove, there is too much friction on the glass for these points to resist, and consequently your panes are always slipping down and showing an inch or two of clear day light between them—a dangerous state of things in cold weather. Each pane should be securely anchored by an iron brad or nail, at its lower end, in addition to the points on the sides; and the s-shaped pieces of tin should not be allowed. They of necessity leave an opening between every pane across the whole width, of the thickness of the tin; admitting as much cold air as probably would be admitted by a hole in each pane of the size of an ordinary lead pencil. This, it is easy to see, should be avoided. Great pains should be taken in having the glass thoroughly well put in, and extra care and trouble should be taken with the valleys. These latter, if you have any in the roof, will be sure to leak and admit cold air unless well put together.

With regard to the roof, besides protecting it where endangered by falling icicles, etc., from the dwelling, as before stated; it should have a clean sweep from ridge to eave, without any projecting cornice, or other ornamentation, to stop the slide of snow and ice. If you have an eave-trough it should be small, and well set under the edge of the glass. There should be no double decked roofs to accumulate ice and then allow it to slide off on to the lower roof to the destruction of the glass. You must sacrifice architectural beauty to the exigencies of the climate. There is no objection to an ornamental cresting along the ridge, or to a neat frieze under the eave, provided it is not deep enough to shade the plants. A lofty roof is not desirable for it gives so much more air space to heat. Ten feet from the ridge to the floor, is quite high enough to work well, and still give room for all ordinary plants. If you have a lean-to, that can run up the side of the house a few feet higher and thus give room for a few very tall plants.

And now comes the important question of heating, for, construct your green-house as carefully and as thoroughly as you please, you will still require the means of getting up a considerable amount of artificial heat if you want to sleep in peace during the colder nights of winter. This heat question will touch your pocket and your time, and is one which is always making demands upon both for six months in the year, and consequently requires your best consideration at the outset. The commonest method of heating green-houses is by a brick furnace, with a flue running under the tables. This is probably the best method so far as original cost goes, but on other grounds it is not advisable for amateurs. There is great danger of fire from the long flues. The brick work will crack, and dry leaves and other rubbish, or woodwork will ignite in spite of your greatest care. The cracks, too, will allow the escape of a gas which is injurious to the plants, and you must always be tinkering at the brick-work to stop it, or else to make the flue draw; and then, such a method of heating will consume as much more fuel as your dwelling-house—a serious matter at present prices. I would prefer a base-burning self-feeder coal stove inside the green-house. This idea will make the professional gardeners open their eyes, for they tell us that heat from an iron surface never does for plants. Never mind them. I have not tried such a method of heating myself, but have received such evidence of its success from those who have, that I feel no hesitation in recommending it as a good plan. If an ample supply of water is kept on the stove, to moisten the air, no harm will be done worth speaking about. This method combines a partial saving of fuel, and also a partial saving of time in attending to the fire. But my own method of heating I consider preferable to all others known to me, as it requires little or no more fuel than what is required for the dwelling-house, and takes little or no more attention. It, however, necessitates a furnace for the house. But what man who is sensible enough to build himself a house

and to wish for a green-house, would build without putting in a furnace? Of all comfortable things in a house a furnace stands first in my estimation. A uniform heat all through the rooms, with no strong drafts, no shutting of inside doors, no carrying of wood or coal up stairs and through the house, with the accompanying labour and dirt. No constant piling of fuel on to fires or into stoves—with the house always comfortable in all parts by night and by day. With all these advantages and others “too numerous to mention,” on the side of a furnace, I will not insult your common sense by supposing you are not going to put one in your house. Then with a house-furnace the heating of your green-house is a mere trifle in extra expense and trouble beyond the first cost of apparatus. In my house-furnace I have what is technically called a “coil.” That is, a number of iron pipes along the sides and top. These communicate with three inch pipes running through the green-house, and are filled with water. There is also a standard or safety pipe to allow the steam generated to escape. By this means the fire that heats my dwelling with hot air heats also the water in the coil, and it at once circulates through the green-house pipes and back again to be re-heated, and so on. The steam which escapes from the standard is good for the plants, as they require a moist atmosphere, and the waste of water is supplied by occasionally putting some more into the pipes. This system of heating I contend combines the greatest economy of fuel and labour, and ensures the warmth in the green-house being kept up; for as soon as the heat lowers there, it falls also in the dwelling-house. To heat a green-house of the dimensions referred to above, with a lean-to and T, not less than four three inch pipes should be used. I am not interested in any particular furnace, but I may state that I have found the large size Mills furnace give every satisfaction, and since I got mine several improvements have been made in it by my clever townsman, Mr. John Plaxton, and no doubt the Mills-Plaxton furnace is now a better one still. Fitting in the coil and pipes must not be entrusted to any tinsmith who thinks himself a plumber, for much skill and experience are necessary to adjust the size and number of pipes to the amount of heat required; and if the pipes of your coil are not given the right slant, the circulation of water will not be rapid enough, and your whole system prove too noisy and unmanageable. If all is made properly, depend on it satisfaction will be the result. This system is perhaps rather more expensive than the others at first, but in the end will be by far the cheapest.

My advice then is to build a greenhouse attached to your dwelling, and to build it thoroughly in all respects, or don't build one at all. Sacrifice the size to meet your pocket, if necessary, but don't give way one inch as to the position, or thorough completeness of the building.

A word before concluding, as to the floor and tops of the tables. The former should be made of slats say one and a half inches wide and set  $\frac{1}{8}$  or  $\frac{1}{4}$  inch apart, so as to prevent water settling on the floor, through which you and your family will have to paddle. The latter should be made solid and then covered with about an inch in depth of screened sand levelled off smooth with a straight edge. Don't cover your tables with Tan-bark or any other stinking or dirty stuff. Sand is the cleanest and neatest thing to use, and the dampness it will hold, will help keep the pots from drying out. And then you can utilize it all along the edges of the tables for starting cuttings.

I have thus outlined my ideas with regard to a greenhouse for an amateur florist of moderate means. To give plans, estimates and measurements in complete detail, would occupy too much of your time. For the hearing you have been pleased to give this paper, accept my thanks.

---

#### REPORT OF THE COUNTY OF RENFREW FRUIT-GROWERS' ASSOCIATION.

A. A. Wright, President; D. Halliday, Vice-President; W. E. Smallfield, Secretary-Treasurer.

The inaugural meeting of this Society—the first County Association established in affiliation with the Provincial—was held in the Renfrew Village Town Hall, on Tuesday, 22nd of January, 1884, and was well attended. The historian of our county will not be



able to say of this, as of some of our local societies, that in its early days it had a struggle for existence. From the first the idea of forming such an Association was received with favour, and it started into life with nearly fifty members, all of whom became, through it, members of the Ontario Fruit-Growers' Association, the subscription fees having been fixed at 25 cents for membership in the County Association, or \$1.20 for membership in both the Ontario and County Associations. A few afterwards joined the local society alone, but eventually most of these became sufficiently enthusiastic to hand in their extra subscription for membership in the larger body.

About half of the members were present at this first meeting, besides a number of interested visitors.

The meeting opened with the election of officers, and then, after a short address by the President, the work laid out for the first meeting—the preparation of a reliable list of the apples that have been successfully grown in this neighbourhood—was proceeded with. Everyone in the room who had had any experience at all in apple culture was expected to relate that experience, and in this manner a first-class list was obtained.

The following is a condensed report of the “experiences :”

D. HALLIDAY.—In 1867 purchased seventy or eighty trees, which were thought by reliable men to be hardy. Of these, the Red Astracan was partly killed back, but is now doing well. Duchess, doing well. Alexander, all killed back ; only remnant of one now left. St. Lawrence, killed back, now doing well. Fameuse, killed back for year or two ; now doing well. Golden and Roxbury Russets and Talman Sweets, all killed off. Crabs did grandly ; had too many, and top-grafted ; grafts doing well. In 1881 put in Wealthy, one bore second year ; McIntosh Red, doing well. Russian trees, all but one doing well. The Mann was a dead failure.

ANDREW FORREST.—Twenty-five years ago purchased twenty-five trees from Rochester ; planted them in three rows, and numbered them instead of labelling. The Talman Sweets were the last to give out, and succeeded very well on his rich stoney loam. Red Astracan, grafted, bore very well. Three years ago planted Wealthy, Twenty Ounce, Fameuse and Wallbridge—all doing well, particularly the Wealthy. Wouldn't advise to plant the Twenty Ounce. Duchess, doing well. Early Strawberry, good, small bearer, but early and seems to be hardy ; had one fifteen years. Russets—two kinds, one the Golden—seemed to thrive, fruit not large. He had a number of seedlings doing well ; the best keeping apples were all from seed so far in this district.

HENRY AIRTH.—Had two Duchess ; very good bearers, in alternate years. Wallbridge, young, seems good. Pewaukee, looks good, but no fruit, had it five years. Wealthy blossomed this year for first time, but no fruit. Alexander, a dead failure.

ROBT. McLAREN.—Had had a number of very good Seedlings, but they had blighted considerably, and his orchard was now pretty much reduced to Montreal Beauty Crabs.

THOS. COLE.—Had no trees, but plenty of “experience.” Hadn't taken care of the trees he did plant, and now he had none.

JOHN JOHNSTON.—Put in trees called iron-clads—Wallbridge, Pewaukee and Haas—but all went the third year. Now had but Duchess, Tetofsky, Wealthy and Rubicon for two years, all doing well. Sandy soil.

R. C. MILLS.—Apples all doing well, only remembered the Duchess by name. Had no trouble in growing trees, but the borer was very troublesome.

JAS. LEITCH.—In 1878 put out a number of trees. Of these, the Haas grew all right and has fruited sparingly for a couple of years. The Alexander did exceedingly well, and has fruited two or three years. The Tetofsky has borne one or two apples. Bottle Greening and Acubafolia failed. In 1881 he purchased some more trees from an agent named Jones, who, he thought, was pretty well known now in this neighbourhood. He didn't think that Jones intended it, but there were one or two very good ones in the lot ; didn't know their names. The Wealthy did splendidly. Pewaukee was alongside the Wealthy, but did not do as well ; would try it in higher ground. Fameuse likely to die, black about the forks.

RICHARD HUMPHRIES.—Trees grew well in his section. His own were mostly Seedlings. Had two good Duchesses.

WM. AIRTH.—McIntosh Red, Fameuse, Pewaukee and Wallbridge were all doing



well. His was a light soil, limestone bottom. Wealthy never killed back at all. The Mann killed out. Tetofsky doing well.

JOHN STEWART (Horton).—Orchard mostly young. Tetofsky, Wealthy and Duchess all doing well. He had a Montreal Beauty Crab, from seed, the fruit of which was larger than that of imported trees. Promised to exhibit it at Agricultural Exhibition.

GEO. MCQUITTY.—Also purchased from Jones. Out of fifty trees seven are living. None are bearing yet.

JAS. McLACHLAN.—Duchess, in bearing, splendid. Wealthy, good. McIntosh Red, not as good as Wealthy. Haas doing well, not yet in bearing. Pewaukees all died. Soil, gravelly.

JOHN AIRTH.—Duchess, good. Pewaukee, Alexander and Haas all doing well. McIntosh Red, a failure; six planted, one delicate living. Soil, loam.

JOSEPH KNIGHT.—Red Astracan, bearing for ten years; it ought to grow with every one. Pewaukee grew vigorously first season, and died next spring. First lot of McIntosh Red died; a second lot now growing. Wallbridge and Wealthy doing well. Tetofsky in bearing six years. Duchess, all growing. Fameuse, bearing six or seven years; not over hardy, does well on gravelly soil. Russet, Greening, and Northern Spy died out after first year. Alexander will do if planted on a northern exposure. Twenty Ounce did well till it commenced to bear.

JOHN MCGREGOR.—Trees mostly seedlings; but Duchess, good and bearing. Pewaukee and Wealthy doing well, but not yet bearing. Alexander failed. Sandy loam, facing north.

WM. LECKIE.—Duchess grows well and bears well. Alexander doing well. Talman Sweet is healthy and hardy and bears well. Fameuse, good crop every year. Early Strawberry does well. Tetofsky bears well. Northern Spy, Ben Davis and Golden Russet are doing well. Sandy loam, north-east face.

MR. BLANE.—Had a Fameuse, which bore for twenty-five years in succession, but had not borne this year. Also had young Wallbridges and Pewaukees, thriving.

A. A. WRIGHT.—Had fruited the Tetofsky, White Astracan, Duchess, Wealthy and McIntosh Red; and the Yellow Transparent, Grand Sultan, Peach of Montreal, Wallbridge, Northfield Beauty, Magog Red Streak, and Scott's Winter are all promising well, though they have not yet fruited.

W. E. SMALLFIELD.—Trees all young. Fruited dwarf Red Astracan one year. St. Lawrence, dwarf, grows well. King of Tompkins County killed back first, now doing well. Keswick Codlin, English Russet, and Fameuse all failed. Wealthy and McIntosh Red doing well.

It was decided to hold a summer meeting in June or July.

A number of questions regarding second-growth forests were asked, on behalf of Mr. Phipps, Clerk of the Preservation of Forests in Ontario.

The President, Mr. Wright, asked the members to make a note of the date when each of their varieties of grapes commenced to colour, and when it ripened.

After the Fruit-Growers' meeting, the farmers present unanimously agreed to endeavour to establish a Farmers' Club.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
NORFOLK—											
Alexander.....	Large.....	Red.....	April.....	Good.....	5	5	3	4	5	5	Clay loam.
American Golden Russet.....	Large.....	Russet.....	March.....	Very good.....	5	5	3	4	5	5	Sandy loam.
American Pippin (Grindstone)	Medium.....	Red.....	March.....	Very good.....	5	5	3	4	5	5	Sandy loam or clay loam.
Baldwin.....	Medium.....	Red.....	November.....	Good.....	5	5	3	4	4	4	"
Beauty of Kent.....	Large.....	Yellow.....	January.....	Good.....	5	5	3	4	4	5	"
Ben Davis.....	Medium.....	Yellow.....	February.....	Poor.....	5	2	2	1	2	2	
Black Gilliflower.....	Medium.....	Red to black.....	December.....	Good.....	5	3	5	5	5	5	
Blenheim Pippin.....	Large.....	Yellow.....	December.....	Poor.....	5	3	1	1	1	1	
Cabashea (Twenty oz. Pippin)	Very large.....	Yellow.....	January.....	Very good.....	5	5	4	5	5	5	
Canada Renette.....	Largest.....	Yellow.....	September.....	Good.....	5	3	4	5	5	4	
Chenango Strawberry.....	Large.....	Red.....	November.....	Good.....	5	3	2	5	5	5	
Colvert.....	Large.....	Yellow.....	September.....	Good.....	5	3	2	5	5	5	
Detroit Black.....	Very large.....	Red.....	September.....	Very poor.....	5	1	1	1	1	1	
Duchess of Oldenburgh.....	Medium.....	Red.....	September.....	Best.....	5	5	5	5	5	5	
Early Harvest.....	Medium.....	Yellow.....	August.....	Best.....	5	5	5	5	5	5	
Early Joe.....	Small.....	Red.....	July.....	Best.....	5	5	5	3	5	5	
Early Strawberry.....	Small.....	Red.....	July.....	Best.....	5	5	5	3	5	5	
Esopus Spitzenburgh.....	Large.....	Red.....	January.....	Best.....	5	3	5	5	5	5	Best clay loam.
Fall Pippin.....	Large.....	Yellow.....	November.....	Poor.....	5	3	3	4	3	3	"
Fameuse (Snow).....	Large.....	Yellow.....	December.....	Best.....	5	5	5	5	5	5	"
Flushing Spitzenburgh.....	Small.....	Red.....	January.....	Good.....	5	5	5	4	5	5	"
Gloria Mundi.....	Small.....	Red.....	December.....	Good.....	5	5	4	4	5	5	"
Golden Russet (N. Y.).....	Largest.....	Yellow.....	January.....	Poor.....	5	3	3	3	4	3	"
Gravenstein.....	Large.....	Russet.....	February.....	Very good.....	5	3	3	3	4	3	"
Green Newtown Pippin.....	Very large.....	Red.....	November.....	Best.....	5	4	3	4	5	5	"
Keswick Codlin.....	Large.....	Yellow green.....	February.....	Best.....	5	5	5	5	5	5	
King of Tompkins Co.....	Largest.....	Red.....	February.....	Best.....	5	5	5	5	5	5	
Maiden's Blush.....	Largest.....	Red.....	February.....	Best.....	5	5	5	5	5	5	
Mann.....	Medium.....	Greenish yellow.....	February.....	Very good.....	5	5	4	5	5	5	
Newtown Spitzenburgh (Vander vere of N. Y.).....	Very large.....	Red.....	February.....	Very good.....	5	5	5	5	5	5	
Newtown Spitzenburgh (Vander vere of N. Y.).....	Medium.....	Red.....	February.....	Good.....	5	5	3	5	5	5	Best soil is clay loam ; cultivated.

NORF.—In this table size is denoted as small, medium, large, very large. Colour is denoted by the words, brown, green, orange, red, russet, yellow, etc. Season is designated by the months as January, February, etc. Quality is indicated by the accepted terms, poor, good, very good, best. Hardiness, productiveness and value for dessert, cooking, home and foreign market are designated by figures from 1 to 5; figures 1 being the lowest and 5 the highest in the scale of merit.

## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.		
NORFOLK—Continued.												
Northern Spy	Large	Red	February	Best	5	5	5	5	5	5	5	Sandy loam ; cultivated.
Pomme Grise	Small	Russet	November	Good	5	5	5	5	5	5	5	"
Rambo	Medium	Green and red stripes	December	Very good	5	4	4	3	4	5	5	Clay loam ;
Red Astrachan	Medium	Red	August	Very good	5	5	5	5	5	5	5	"
Red Canada	Medium	Red	January	Very good	5	5	5	5	5	5	5	"
Ribston Pippin	Large	Red	December	Very good	5	5	5	5	5	5	5	"
Rhode Island Greening	Large	Green	January	Best	5	5	5	5	5	5	5	"
Roxbury Russet	Very large	Russet	February	Good	5	5	5	5	5	5	5	"
St. Lawrence	Large	Green & red streaks, often red	September	Very good	5	5	5	5	5	5	5	"
Sweet Bough (Large Yellow Bough)	Medium	Yellow	September	Good	5	5	5	5	5	5	5	"
Swayzie Pomme Grise	Small	Russet	February	Best	5	5	5	5	5	5	5	"
Talman Sweet	Medium	Yellow	February	Good	5	5	1	3	2	2	2	"
Tetofsky	Small	Yellow	September	Poor	5	1	1	1	1	1	1	"
Twenty Ounce (Cayuga Red-streak)	Very large	Red	September	Good	5	5	5	5	5	5	5	"
Wagner	Medium	Yellow	January	Good	5	5	3	4	5	4	4	"
Wealthy	Medium	Yellow	January	Very good	5	5	4	4	5	5	5	"
Westfield Seekno further	Large	Red	January	Best	5	5	5	5	5	5	5	"
White Astrachan	Medium	Red	December	Very good	5	5	4	5	5	5	5	"
Winesap	Medium	Red	February	Very good	5	5	3	3	5	3	3	"
Yellow Belflower	Medium	Yellow	February	Very good	5	5	4	5	5	5	5	"
Yellow Newtown Pippin	Medium	Yellow	March	Very best	5	5	5	5	5	5	5	and best cultivation.

## VARIETIES (CHIEFLY GROWN AND OF MOST VALUE) IN CHARLOTTEVILLE.

		Fall.		Summer.	
Baldwin.	Gravenstein.			Early Harvest.	
Esopus Spitzenburg.	Faneuse or Snow.			Sweet Bough.	
Northern Spy.	Duchess of Oldenburg.			Red Astrachan.	
King of Tomkins Co.	St. Lawrence.			Chenango Strawberry.	
Green and Yellow Newtown Pippin.	Twenty Ounce or Cayuga Red Streak.			Early Strawberry.	
Swayzie Pomme Grise.	Ribston Pippin.			Early Joe.	
American and Roxbury Russets.					
R. I. Greening.					
Yellow Belflower.					



VARIETIES—  
CLASSIFIED BY COUNTIES.

REMARKS.  
SOIL, CULTIVATION, ETC.

SCALE 1 TO 5.

Hardiness.  
Productiveness.  
Dessert.  
Cooking.  
Home Market.  
Foreign Market.

SEASON.

COLOUR.

SIZE.

QUALITY.

NORFOLK—Continued.

*Crab Apples.*

Hyslop.....	Large	Red	August.....	Good.....	5	5	1	4	5	1
Large Red.....	Small	Red	November.....	Very good..	5	5	1	5	5	2
Large Yellow.....	Small	Yellow	August.....	Good.....	5	5	1	5	5	1
Montreal Beauty.....	Large	Yellow	October.....	Very good..	5	5	1	5	5	1
Transcendent.....	Medium	Yellow	October.....	Best.....	5	5	1	5	5	1
Siberian.....	Medium	Golden yellow	September....	Very good..	5	5	1	5	5	1

LINCOLN—

Alexander.....	Large	Red or Striped	July to Oct....	Fair.....	4	1	4	5	5	Sand.
American Golden Russet.....	Medium	Russet	April.....	Best.....	5	5	1	1	4	
American Pippin (Grindstone).....	Medium	Striped	May.....	Poor.....	4	3	1	2	1	
Bailey Sweet.....	Large	Red	October.....	Poor.....	5	5	4	4	5	
Baldwin.....	Medium to large	Reddish brown	February.....	Very good..	5	5	4	4	5	Largest on heavy clay; cultivated.
Beauty of Kent.....	Large	Striped and splashed red	October.....	Very good..	5	5	1	2	3	Sand.
Ben Davis.....	Medium to large	Striped	Jan. to April..	Poor.....	5	5	1	2	3	
Blenheim Pippin.....	Large	Striped red	October.....	.....	5	4	.....	.....	.....	
Blue Pearmain.....	Large	Bluish red.	December.....	Good.....	3	2	3	4	4	
Bourassa.....	Medium	Reddish russet.	January.....	Good.....	4	4	3	3	4	
Cabashea (Twenty oz. Pippin).....	Large	Red	October.....	Poor.....	5	1	1	2	4	"
Colvert.....	Large	Red	September....	Good.....	5	3	3	4	.....	"
Cooper's Market.....	Small	Red	March.....	Poor.....	5	4	2	1	1	
Cranberry Pippin.....	Large	Striped red	January.....	Very good..	5	4	4	4	4	Sand; inclined to grow misshapen.
Detroit Black.....	Large	Dark red.	October.....	Very good..	5	4	4	4	4	Sand; same as last, uneven shape.
Duchess of Oldenburgh.....	Large	Yellow	September....	Best.....	5	5	5	5	5	Sand; spots badly.
Early Harvest.....	Small to medium	Yellow	July and Aug.	Best.....	3	2	4	2	4	Sand; uncoloured in shady parts of tree and very small.
Early Strawberry.....	Small	Striped red	August.....	Very good..	3	2	4	4	3	Cracks, scabs of late, so that it is worthless; cannot get good samples.
Esopus Spitzenburgh.....	Small	Red.	February.....	Best.....	4	2	4	4	4	
Fallowater.....	Large	Brown to green.	November.....	Poor.....	3	4	1	4	3	
Fall Jemmett.....	Medium to large	Yellow	November.....	Good.....	4	4	4	5	4	Spots so badly that it is usually unfit to ship
Fall Pippin.....	Large	Yellow	September....	Best.....	4	3	2	5	4	"
Fameuse (Snow).....	Small	Red	January.....	Best.....	5	5	5	5	4	"
Gloria Mundi.....	Large	Yellow.	October.....	Good.....	5	5	2	2	4	

## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS. SOIL, CULTIVATION, ETC.
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	
LINCOLN—Continued.										
Golden Sweet	Large	Yellow	August.	Best	5	5	5	3	3	
Gravenstein	Large	Striped red	September.	Best	5	3	2	4	5	
Green Newtown Pippin	Medium	Green.	Jan. to April.	Best	5	3	5	5	3	
Grimes' Golden Pippin	Small	Yellow	February	Good	4	4	4	4	3	5
Hawley	Large	Yellow	October.	Best	4	5	4	5	5	3
Holland Pippin	Large	Golden with blush	December	Best	4	3	4	5	5	4
Jersey Sweeting	Medium	Red	September.	Good	4	4	4	1	3	
Keswick Codlin	Medium	Whitish	Aug. and Sept.	Good	5	5	3	5	4	
King of Tompkins Co.	Large	Red	February	Best	5	2	5	5	5	4
Lady	Very small	Light with blush	February	Best	3	3	5	1	5	4
Maiden's Blush	Medium	Red cheek	October	Very good	5	5	...	4	...	
Mann	Medium	Very green	Mar. or April.	Good	5	5	...	4	...	
Mother	Medium	Red	January	Good	4	4	5	2	3	4
Newton Spitzenburgh (Vanderbere of N.Y.)	Medium	Red	...	...	...	...	...	...	...	Spots and scabs.
Northern Spy	Large	Bluish striped	Mar. to April.	Best	5	5	5	5	4	4
Peck's Pleasant	Medium	Greenish with blush	February	Good	4	4	4	3	3	4
Pomme Grise	Small	Russet	January	Best	5	1	5	1	...	
Porter	Medium	Yellow	October	Best	5	4	5	3	5	...
Primate	Medium	Yellow with blush	August.	Best	4	4	4	4	4	...
Rambo	Medium	Bluish striped	October	...	5	5	1	4	...	
Red Astrachan	Medium to large	Red	August.	Very good	5	2	4	4	5	...
Red Canada	Medium	Red	February	Fair	4	4	3	4	4	4
Red Russet	Medium	Reddish Russet	October	Good	5	5	5	5	5	5
Ribston Pippin	Medium to large	Striped with red	December	Best	5	5	5	5	5	5
Rhode Island Greening	Large	Green	February	Very good	5	5	2	4	4	2
Roxbury Russet	Medium	Russet	April to May	Very good	5	5	3	4	5	4
Scarlet Pearmain	Large	...	Dec. to Jan.	Good	4	2	1	...	...	
St. Lawrence	Medium	Striped	October	Good	5	3	4	3	4	...
Swaar	Medium	Light green	...	Good	4	3	2	...	...	Spots. Not clear.
Sweet Bough (Large Bough)	Large	Yellow	July to Aug.	Very good	5	3	3	...	3	...
Talman Sweet	Small	Yellow	February	...	5	5	3	4	4	...
Twenty Ounce (Cayuga Red-streak)	Large	Striped	December	Good	4	4	2	4	4	4
										Spots in some orchards.

Vandevere	Medium	Striped	January	Best	4	3	4	2	3	2	Spots badly.
Wagner	Medium	Red	January	Very good.	4	3	3	1	3	Too misshapen in form.	
Wesley	Medium	Red	December	Good	5	4	4	4	4		
Westfield Seekno further	Medium	Red and striped	January	Good	5	5	4	3	4		
Yellow Belflower	Medium to large	Yellow	Jan. to Feb.	Good	2	1	3	4	3	Very seldom fit for market.	
Crab Apples.											
Hyslop	Large	Dark red	September	Good	5	5	1	5	5		
Large Yellow	Large	Yellow	September	Good	5	5	1	4	4		
Montreal Beauty	Large	White with blush	September	Good	5	5	1	5	4		
Transcendent	Large	Red	September	Best	5	5	1	5	5		
Siberian	Small	Red and yellow	September	Good	..	..	..	..	..	Good for jellies.	
MIDDLESEX—											
American Summer Pearmain	Medium	Red mottled	Aug. and Sept.	Very good..	3	4	3	..	4	Needs good soil and good cultivation.	
Baldwin	Medium	Brownish red	Jan. to Feb.	Best	4	..	..	5	..	Does best on good limestone soil, well cultivated.	
Belmont	Medium	Whitish blush	Oct. to Jan.	Good	4	4	5	..	4	Does well on good deep clay loam.	
Colvert	Medium to large	Striped or green and red	Sept. and Oct.	Medium	5	5	..	3	3		
Early Harvest	Medium	Yellow	August	Good	4	4	4	4	4	Spots badly lately.	
Esopus Spitzenburgh	Medium	Red	February	Very good	5	3	4	5	5	Requires rich clay soil.	
Fall Pippin	Large	Green	Nov. and Dec.	Good	4	3	4	4	3		
Faneuse (Snow)	Medium	Red and green	Sept. to Dec.	Very good	5	5	5	..	5	Does well generally on all soils, if well cultivated.	
Golden Russet (N. Y.)	Medium	Golden russet	Nov. to April.	Very good	5	5	5	..	4	Best on good deep, strong soil.	
Gravenstein	Medium	Red and yellow	Sept. to Nov.	Very good	3	3	5	5	5	Needs good soil and extra care.	
Green Newtown Pippin	Large	Green and yellow	Feb. and Mar.	Best	2	3	5	5	5		
Grimes' Golden Pippin	Large	Yellow	September	Very good	3	4	4	5	5	Not sufficiently tried to warrant an opinion.	
Hawley	Large	Red and green	Sept. to Jan.	Good	3	5	..	4	5	Needs good medium soil.	
Hubbardston Nonsuch	Large	Red and striped	Nov. to April.	Very good	5	5	4	4	5	Best on limestone or good deep, strong soil.	
Jonathan	Medium	Red and green	Nov. to April.	Very good	5	5	4	4	5	Needs good soil and cultivation.	
King of Tompkins Co.	Large	Red striped	Nov. to March	Good	4	3	..	4	5	Several of the others do fairly, but are not generally reliable.	
Maiden's Blush	Large	Red and yellow	Nov., Dec.	Best	4	4	5	4	4	One of our best late fall apples.	
Mann	Medium	Green	Nov. to May	Good	5	4	..	4	4	Not generally known here.	
Munson's Sweet	Medium	Yellowish green	Sept. and Oct.	Very good	5	5	5	5	4	Don't know if this is identical with what is generally called Sweet Pear, if so it is excellent.	
Northern Spy	Large	Red striped	Nov. to April.	Very good	5	2	5	5	5		
Phoenix	Medium	Dark and white spots	Oct. to April.	Poor	5	5	..	3	3		
Porter	Medium	Yellow	Sept. and Oct.	Very good	5	5	5	5	3		
Red Astrachan	Medium	Red striped	Aug. to Sept.	Good	4	5	..	4	5		
Red Canada	Medium	Red	Oct. to April.	Good	4	4	4	4	5		
Ribston Pippin	Medium	Red	Oct. to April.	Good	4	4	4	4	4		
Rhode Island Greening	Medium	Red and russet	Oct. to Jan.	Good	3	4	4	4	4		
Rhode Island Greening	Medium	Green	Nov. to March	Very good	4	5	3	5	5		
Roxbury Russet	Large	Russet	March to May	Good	5	5	2	3	4		
Sops of Wine	Large	Green russet	Jan. and Feb.	Best	5	4	4	5	4		
St. Lawrence	Medium to large	Striped	September	Very good	5	5	5	4	5		



## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS, SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.		
MIDDLESEX—Continued.												
Sweet Bough (Large Yellow Bough).	Large	Yellow	August.....	Good.....	4	4	4	1	1	1	Very poor for market.	
Talman Sweet	Medium	Yellow	Oct. to Jan...	Good.....	5	5	5	3	3	3		
Twenty Ounce (Cayuga Red-streak).	Large	Red striped	Oct. to Jan...	Good.....	4	5	5	4	4	4	Needs extra cultivation and good soil. Especially valuable for drying, needs good deep soil.	
Westfield Seekno further	Medium	Greenish mottled	Oct. to March	Good.....	5	5	3	3	3	3		
Williams' Favourite	Medium	Red and green.	Aug. and Sept.	Good.....	4	4	3	3	5	5		
Winesap	Medium to large	Red and yellow	Sept. to Dec..	Very good..	4	5	3	5	5	5		
Yellow Belleflower	Medium	Yellow	Nov. to March	Good.....	5	3	3	4	4	5	Does not succeed in this section.	
Yellow Newtown Pippin.	Large	Yellow	Feb. and Mar.	Best.....	3	3	5	5	5	5		
Crab Apples.												
Hyslop.....	Medium	Dark red	Sept. to Nov.	Poor.....	5	4	4	4	4	5		
Transcendent.....	Large	Striped	September....	Very good..	5	5	5	5	5	5		
OXFORD—												
Alexander.....	Very large.	Red streaked	September....	Medium....	4	5	5	5	5	5		
American Golden Russet.	Small	Russet	Mar. to July..	Medium....	5	5	2	1	3	5		
American Pippin(Grindstone)	Large	Red streaked	Mar. to June.	Poor.....	5	5	2	1	2	5		
Baldwin.....	Medium	Brown red	Feb. to May..	Medium....	5	5	3	4	4	5		
Beauty of Kent	Large	Brown red	Dec. to April.	Good.....	4	3	2	5	5	2		
Belmont	Medium	Yellow red cheek	Nov. to Feb..	Good.....	2	3	4	4	5	1		
Ben Davis.....	Medium	Red streaked	Dec. to Feb..	Good.....	4	5	3	5	5	4		
Black Gillflower	Small	Brown	November....	Poor.....	3	5	2	1	1	5		
Blenheim Pippin	Large	Red streaked	Oct. and Nov.	Good.....	5	3	4	5	5	5		
Blue Pearmain	Medium	Brown	Dec. to Feb..	Poor.....	2	2	1	1	1	1		
Bottle Greening	Medium	Green	Dec. and Jan.	Very good..	3	4	1	4	3	1		
Bourassa	Small	Russet brown.	Feb. to May..	Poor.....	2	3	2	2	1	1		
Cabashea (Twenty Oz. Pippin)	Medium	Red streaked	Jan. and Feb.	Fair.....	1	1	2	4	3	3		
Canada Baldwin	Small	Red	Feb. and Mar.	Medium....	2	3	1	4	2	4		
Colvert.....	Large	Yellow red	Nov. to Jan..	Medium....	1	1	1	4	3	4		

Domine .....	Large	Red streaked	Dec. and Jan.	Poor	3	1	4	3	2
Detroit Black	Large	Dark red	Oct. and Nov.	Good	2	1	4	2	2
Duchess of Oldenburgh	Medium	Red streaked	Sept. and Oct.	Good	1	4	5	5	5
Early Harvest	Small	Yellow	August	Good	3	4	5	5	2
Early Joe	Small	Red	August	Good	4	5	5	3	4
Early Strawberry	Medium	Red	August	Good	3	2	1	5	5
Esopus Spitzenburgh	Medium	Red	Jan. to May	Good, best	1	2	5	5	5
Fallowater	Large	Brown green	Jan. to April	Poor	5	5	1	1	5
Fall Jettening	Medium	Yellow	Sept. and Oct.	Good	5	5	5	5	2
Fall Pippin	Large	Yellow	Nov. to Jan.	Good	5	5	5	5	5
Fameuse (Snow)	Small	Red	Oct. to May	Good	3	5	5	5	5
Flushing Spitzenburgh	Medium	Red streaked	Nov. to Jan.	Fair	2	3	2	1	1
Gloria Mundi	Large	Yellow white	Oct. and Dec.	Poor	1	1	1	3	4
Golden Russet (N.Y.)	Small	Yellow russet	Mar. to June	Medium	4	4	3	3	5
Golden Sweet	Medium	Yellow	Aug. and Sept.	Poor	4	3	1	1	1
Gravenstein	Large	Red streaked	Oct. and Nov.	Poor	3	2	1	2	2
Hawley	Large	Yellow	Sept. and Oct.	Good	3	2	4	5	5
Hawthornden	Medium	Yellow, red cheek	Sept. and Oct.	Good	2	1	3	3	2
Holland Pippin	Medium	Yellow	Dec. to Jan.	Good	3	2	1	4	3
Hubbardston Nonesuch	Large	Red streaked	December	Poor	2	2	1	3	2
King of Tompkins Co.	Large	Red	Dec. to Feb.	Good	4	3	5	5	5
Lady	Small	Red	Dec. to Feb.	Good	2	1	3	2	1
Late Strawberry	Medium	Red streaked	Aug. and Sept.	Good	3	2	1	3	1
Maiden's Blush	Small	Yellow, red cheek	Sept. and Oct.	Good	4	4	5	5	5
Mother	Large	Red streaked	Oct. and Nov.	Medium	3	2	1	3	4
Munson's Sweet	Medium	Yellow	October	Good	4	3	4	5	2
Newton Spitzenburgh (Vanderbere of N.Y.)	Medium	Red	Jan. and Feb.	Good	2	1	3	1	3
Northern Spy	Large	Red streaked	June to Jan.	Good	5	5	5	5	5
Pennock	Small	Red russet	Dec. to Feb.	Poor	4	5	2	4	2
Pomme Grise	Small	Russet	Jan. and Feb.	Good	4	3	5	2	3
Porter	Medium	Yellow	September	Good	4	5	5	5	5
Primate	Medium	Yellow, red cheek	September	Good	2	3	4	5	5
Pumpkin Russet	Large	Green russet	Nov. and Dec.	Poor	4	5	4	3	1
Rambo	Medium	Red streaked	Oct. and Nov.	Medium	2	1	1	2	1
Red Astrachan	Small	Red	August	Good	4	5	5	5	5
Red Canada	Medium	Red	Jan. and Feb.	Poor	4	4	2	4	3
Red Russet	Medium	Red	January	Medium	3	2	1	1	2
Ribston Pippin	Medium	Red russet	December	Good	4	5	5	5	5
Rhode Island Greening	Medium	Green	Jan. to Mar.	Good	5	5	5	5	5
Roxbury Russet	Medium	Russet	Mar. to June	Good	1	2	3	2	5
Scarlet Pearmain	Red	Red	Nov. to Feb.	Good	2	1	4	4	3
St. Lawrence	Medium	Red streaked	Sept. and Oct.	Good	4	3	5	5	4
Swaar	Medium	Yellow	Jan. to May	Good	3	2	5	5	3
Sweet Bough (Large Bough)	Large	Yellow	July and Aug.	Good	3	1	4	2	1
Swayzie Pomme Grise	Small	Russet	February	Good	1	2	4	2	1
Talman Sweet	Medium	Yellow	Jan. to May	Good	3	4	3	3	4
Twenty Ounce (Gayuga Red-streak)	Large	Red streaked	Sept. to Nov.	Good	4	4	2	5	5
Vanderbere	Medium	Red streaked	Dec. and Jan.	Medium	3	2	1	3	4

# COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS, SOIL, CULTIVATION, ETC.
					Hardiness.	Productiveness.	Desert.	Cooking.	Home Market.	Foreign Market.	
OXFORD—Continued.											
Wagener	Small	Red	Mar. and April	Good	2	2	1	2	4	5	Uncertain bearer.
Wealthy	Large	Red streaked	Oct. and Nov.	Good	3	4	2	5	5	5	
Westfield Seekno further	Large	Red streaked	Oct. and Dec.	Good	4	5	5	3	5	2	
White Astrachan	Medium	White, red mottled	Aug. and Sept.	Good	2	5	5	5	5	..	
Yellow Belleflower	Large	Yellow	Dec. to Mar.	Good	5	4	5	5	5	2	
Yellow Newton Pippin	Medium	Yellow	Mar. and May.	Good	3	2	4	4	4	5	
BRANT—											
Alexander	Very large	Red	October	Good	3	4	..	4	4	3	{ Sandy soil in general throughout the county, and with but few exceptions the cultivation is not much; some parties plough the ground and try to grow large crops, others seed down, cut the grass for hay, and then pasture the rest of the season, the cattle breaking down the smaller trees in general. The county is a good fruit-growing one, producing almost all varieties of common fruit, with a little care and attention.
American Golden Russet	Medium	Russet	Winter	Very good	4	5	3	3	4	4	
Arnold's Beauty	Large	Yellowish red	Winter	Best	5	5	5	4	5	5	
Baldwin	Medium	Red	Winter	Good	2	4	2	4	4	5	
Belmont	Medium	Green, red cheek	January	Good	4	3	3	4	4	1	
Ben Davis	Medium	Red	Mar. & April	Good	5	5	5	4	4	4	
Benoni	Medium	Striped red	Summer	Best	5	5	5	3	5	5	
Black Gilliflower	Medium	Dark red	Jan. to March	Good	5	5	5	3	3	3	
Blenheim Pippin	Large	Red	March	Good	5	5	5	2	5	5	
Cabashea (Twenty oz. Pippin)	Large	Green red	Oct. to Nov.	Poor	5	3	..	4	3	5	
Canada Baldwin	Medium	Red	January	Good	5	2	5	3	5	2	
Colvert	Medium	Greenish yellow	October	Good	5	4	..	3	4	4	
Cox's Orange Pippin	Medium	Orange russet	Winter	Best	5	5	5	..	3	5	
Duchess of Oldenburgh	Medium	Striped	September	Good	5	4	..	4	5	5	
Early Harvest	Medium	Yellow	August	Good	5	3	4	3	5	4	
Early Strawberry	Small	Dark red	August	Best	4	4	5	..	5	4	
Esopus Spitzenburgh	Large	Red	February	Very good	5	5	5	4	5	5	
Fallwater	Large	Reddish	March	Good	5	5	5	3	5	5	
Fall Pippin	Large	Yellow	Nov. and Dec.	Very good	4	3	4	4	4	1	
Fameuse (Snow)	Medium	Red	Nov. and Dec.	Best	5	5	5	4	5	5	
Gloria Mundi	Large	Light green	November	Poor	3	3	2	1	1	1	
Golden Russet (N. Y.)	Medium	Russet	March to May	Very good	5	5	5	3	5	5	
Golden Sweet	Medium to large	Yellow	Late fall	Good	4	4	2	..	..	..	
Gravenstein	Large	Striped	Late fall	Very good	5	5	5	5	5	5	

One of our best.



Green Newtown Pippin.....	Large.....	Green.....	April to May.....	Very good.....	5	5	5	5	5	5
Grimes' Golden Pippin.....	Medium.....	Yellow.....	Early winter.....	Best.....	5	5	5	5	5	5
Hawley.....	Very large.....	Yellow.....	September.....	Good.....	4	4	4	4	4	4
Hawthornden.....	Medium.....	Yellow.....	September.....	Good.....	5	3	2	4	5	2
Holland Pippin.....	Large.....	Green.....	December.....	Good.....	4	3	4	3	5	2
Hubbardston Nonesuch.....	Medium.....	Brown.....	January.....	Very good.....	5	3	3	5	3	5
Keswick Codlin.....	Medium.....	Yellow.....	September.....	Poor.....	3	3	3	2	2	1
King of Tompkins Co.....	Very large.....	Striped red.....	Winter.....	Good.....	5	3	3	3	4	5
Lady.....	Small.....	Waxy yellow and red.....	January.....	Good.....	5	5	2	4	5	5
Maiden's Blush.....	Medium.....	Yellow and red.....	Oct. and Nov.....	Good.....	4	5	2	4	5	5
Melon.....	Medium to large.....	Red.....	Nov. and Dec.....	Very good.....	5	5	4	5	5	5
Monmouth Pippin.....	Large.....	Yellow.....	November.....	Poor.....	3	4	3	3	4	1
Newtown Spitzenburgh (Vander- veere of N. Y.).....	Large.....	Reddish.....	October.....	Good.....	5	5	3	4	4	2
Northern Spy.....	Large.....	Red.....	Jan. and Mar.....	Best.....	4	4	4	5	5	5
Ontario.....	Very large.....	Yellow and red.....	Winter.....	Best.....	5	5	2	5	5	5
Peck's Pleasant.....	Large.....	Yellow.....	November.....	Good.....	4	4	5	4	3	1
Pomme Grise.....	Very small.....	Russet.....	Winter.....	Best.....	5	5	5	3	5	5
Porter.....	Medium.....	Yellow.....	November.....	Good.....	4	3	3	4	4	4
Pumpkin Russet.....	Large.....	Yellow russet.....	October.....	Poor.....	4	3	3	4	4	4
Rambo.....	Medium.....	Yellow striped.....	January.....	Good.....	5	5	5	4	4	2
Red Astrachan.....	Medium to large.....	Light crimson.....	Aug. and Sept.....	Good.....	5	5	5	5	5	3
Red Canada.....	Large.....	Red.....	October.....	Good.....	5	4	4	4	5	3
Ribston Pippin.....	Large.....	Yellow, red, striped.....	Early winter.....	Very good.....	5	5	5	5	5	5
Rhode Island Greening.....	Large.....	Green.....	Winter.....	Very good.....	5	5	5	5	5	3
Roxbury Russet.....	Large.....	Russet.....	Winter.....	Good.....	4	3	2	4	4	5
St. Lawrence.....	Medium.....	Striped.....	October.....	Good.....	5	4	4	3	4	4
Swaar.....	Medium.....	Yellow.....	March.....	Very good.....	5	4	5	2	4	4
Sweet Bough (Large Yellow Bough).....	Large.....	Yellow.....	September.....	Good.....	4	4	3	3	2	2
Swayzie Pomme Grise.....	Small.....	Orange russet.....	Winter.....	Very good.....	5	5	5	1	4	4
Talman Sweet.....	Medium.....	Yellow.....	Winter.....	Good.....	4	4	1	4	2	2
Twenty Ounce (Cayuga Red- streak).....	Very large.....	Striped.....	Fall.....	Very good.....	4	5	1	4	4	3
Wagener.....	Medium.....	Red.....	Winter.....	Very good.....	5	5	4	4	5	4
Wealthy.....	Medium.....	Red.....	October.....	Good.....	5	3	3	3	4	4
Westfield Seekno further.....	Medium.....	Russet.....	Winter.....	Good.....	5	5	5	3	4	4
Winesap.....	Small.....	Red.....	October.....	Good.....	3	4	5	2	2	2
Yellow Belflower.....	Medium.....	Yellow.....	November.....	Good.....	5	3	2	1	3	1
<i>Crab Apples.</i>										
Hyslop.....	Medium.....	Red.....	September.....	Good.....	5	3	..	4	3	..
Large Yellow.....	Large.....	Yellow.....	September.....	Very good.....	5	3	..	4	3	1
Siberian.....	Small.....	Yellow red.....	September.....	Good.....	5	5	..	2	3	..
<i>HURON—</i>										
Alexander.....	Very large.....	Greenish yellow covered with red.....	Sept. and Oct.....	Good.....	5	3	1	2	3	..
American Golden Russet.....	Medium.....	Yellow and russet.....	Dec. to April.....	Best.....	5	5	4	2	5	5
American Pippin (Grindstone).....	Medium.....	Green-splashed red.....	Jan. to May.....	Good.....	5	4	..	3	2	2

Forty dollars per barrel in New York.

More refuse fruit than any other.

Most productive, bears early and every year.

Splendid early apple, does well here.

Excellent for cider.

## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS. SOIL, CULTIVATION.	
					Hardness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
Huron—Continued.											
American Summer Pearmain	Medium.	Yellow and red.	Aug. and Sept.	Very good.	5	3	3	1	3		
Arnold's Beauty	Medium.	Yellow, red and russet.	Dec. to April.	Good.	5	3	2	1	2	2	
Bailey Sweet	Large.	Yellow and red-splashed	Nov. to March	Good.	5	4		2	1		
Baldwin.	Large.	Red and green.	Dec. to March	Very good.	4	5	4	4	5		
Beauty of Kent.	Very large	Green and yellow striped with red									
Belmont	Large.	Waxen yellow and red cheek	Sept. and Oct.	Good.	5	4		4	2		
Ben Davis.	Medium.	Yellow and red.	Nov. to Feb.	Good.	5	3	2	2	2	1	
Benoni.	Small.	Yellow and red.	Jan. to March	Good.	5	4	1	2	2	4	
Black Gillflower.	Medium.	Dull red.	August.	Very good.	5	3	3		2		
Blenheim Pippin	Large.	Orange and red striped.	Dec. to Feb.	Good.	5	5	2	3	1	2	
Blue Pearmain	Large.	Dark red.	Oct. to Jan.	Good.	5	4	4	4	3	4	
Bottle Greening	Medium.	Green and yellow.	Nov. to Feb.	Good.	5	3	3	2	2	3	
Bourassa.	Medium.	Orange, russet and yellow.	Dec. to Feb.	Good.	5	3	1	3	2	1	
			Nov and Dec.	Good.	5	3	2	2	2	4	Keeps much longer, but becomes tough and flavorless.
Cabashea (Twenty oz. Pippin)	Very large.	Green and yellow.	Dec. to Feb.	Poor.	5	4		3	2	3	
Canada Baldwin.	Medium.	White and red.	Dec. to April.	Very good.	5	4	4	4	3	4	
Canada Renette.	Large.	Green, yellow and brown.	Dec. to April.	Very good.	5	4	2	3	2	3	
Chenango Strawberry	Medium.	White and red.	September.	Good.	5	4	3	1	3		
Colvert.	Large.	Yellow and red striped.	Oct. and Nov.	Good.	5	5	2	4	3	4	
Cooper's Market.	Medium.	Yellow and red.	Dec. to April.	Good.	5	5	3	2	2	3	
Cornish Gillflower.	Medium.	Green and Yellow	Dec. to March	Good.	4	2	2	2	1	1	
Cox's Orange Pippin	Medium.	Yellow and red.	Sept. and Oct.	Very good.	5	4	3	2	3	2	Likely to grow in favour.
Cranberry Pippin.	Medium.	Yellow and red.	Nov. to Feb.	Good.	5	3	1	3	3	1	
Domine.	Medium.	Green and red.	Dec. to April.	Very good.	4	5	3	1	2	3	
Drap D'Or	Large.	Yellow.	September.	Good.	5	2	2	3	2		
Detroit Black	Large.	Dark red.	September.	Poor.	4	2		1	1		
Duchess of Oldenburgh.	Medium.	Yellow and red.	July and Aug.	Good.	5	4	1	5	5		
Dutch Mignonne.	Medium.	Yellow and red.	Dec. to March	Good.	5	4	2	3	3	2	
Dyer (Pomme Royal)	Medium.	Green, yellow and red striped	Sept. and Oct.	Very good.	5	3	3	1	2		
Early Harvest.	Medium.	Greenish yellow	July.	Good.	5	3	3	1	3		
Early Joe	Small.	Yellow and red.	August.	Very good.	5	3	4		2		
Early Strawberry	Small.	Striped red.	August.	Very good.	5	3	3	1	3		

English Russet.	Medium.	Light russet.	Jan. to May.	Good.	5	5	3	1	2	3	There are four russets wrongly called "English Russet." Generally unprofitable, as it is so shy a bearer.
Esopus Spitzenburgh	Medium.	Green and red.	Dec. to March	Best.	4	2	5	4	5	3	
Fallwater	Very large	Greenish yellow	Dec. to Feb.	Good.	5	5	1	3	1	3	
Fall Jemmeting	Large	Green and yellow	Sept. and Oct.	Good.	5	5	1	3	2	1	
Fall Pippin	Large	Green and yellow	Oct. to Dec.	Very good.	5	4	2	4	3	1	
Fameuse (Snow)	Medium.	Green and red.	Oct. to Jan.	Very good.	5	5	4	4	4	3	Spots badly with fungus.
Flushing Spitzenburgh	Medium.	Red.	Nov. to Feb.	Good.	5	5	3	1	3	4	
Gloria Mundi.	Very large	Greenish yellow	Nov. to Jan.	Poor.	5	2	2	3	2	1	
Golden Russet (N. Y.)	Medium.	Russet	Dec. to March	Very good.	5	4	4	1	3	4	
Golden Sweet	Large	Yellow.	Aug. and Sept.	Good.	5	5	1	4	3	..	
Grand Sultan.	Very large	Green and red.	September.	Good.	5	4	1	4	3	..	
Gravenstein	Large	Yellow and red	Sept. and Oct.	Very good.	5	4	4	4	3	2	
Green Newtown Pippin	Medium.	Green.	Dec. to May.	Best.	4	2	5	..	2	5	Can only get clean specimens on good clay loam, well underdrained and cultivated and regularly salted. In general cultivation and soil it is covered with fungus spotting.
Grimes' Golden Pippin	Medium.	Yellow.	Dec. to March	Very good.	5	5	5	..	3	4	
Haas or Fall Queen	Medium.	Green, yellow and red.	Sept. and Oct.	Good.	5	4	3	3	1	..	
Hawley	Large	Yellow.	September.	Good.	4	3	2	3	2	..	
Hawthornden	Medium.	Yellow red cheek.	September.	Good.	4	5	1	3	3	..	
Holland Pippin	Large	Green and yellow.	Sept. to Nov.	Good.	4	3	1	4	3	1	
Hubbardston Nonesuch.	Large	Yellow and red.	Nov. to Jan.	Very good.	5	4	4	3	3	4	
Irish Peach	Medium.	Yellow, green and red	August	Good.	4	3	2	3	2	..	
Jeffers	Medium.	Yellow and red.	Sept. and Oct.	Good.	5	5	3	1	3	3	
Jersey Sweeting	Medium.	Green, yellow and red striped	Sept. and Oct.	Good.	5	4	2	3	2	..	
Jonathan.	Medium.	Yellow and red	Dec. to March	Very good.	5	4	3	1	3	3	
Kentish Fillbasket.	Very large	Yellow and red striped.	Sept. and Oct.	Good.	5	4	..	4	3	..	
Keswick Codlin	Medium.	Green and yellow.	Aug. to Oct.	Good.	5	5	..	5	3	..	
King of Tompkins Co.	Large	Yellow and red	Nov. to Feb.	Very good.	5	5	4	4	4	5	
Lady	Small	Yellow and red.	Dec. to April.	Very good.	5	5	5	..	2	4	
Late Strawberry	Medium.	Light-green and red	Oct. to Dec.	Very good.	5	4	4	1	2	3	
Lord Suffield	Large	Yellow and red.	Aug. and Sept.	Good.	5	5	1	3	3	1	
London Pippin	Large	Yellow and red	Nov. to Jan.	Good.	5	3	1	3	3	..	
Lowell	Large	Light-yellow	September.	Good.	4	4	2	2	2	..	
Maiden's Blush.	Medium.	Green, yellow, red-cheek.	Sept. and Oct.	Good.	5	4	..	4	4	3	
Mann	Medium.	Dark-green and yellow when ripe.	Jan. to April.	Very good.	5	4	3	4	3	4	Growing in favour.
Melon	Medium.	Yellow and red.	Nov. to Feb.	Best.	4	4	5	..	3	4	
Minister	Large	Green, yellow and red striped	Oct. to Jan.	Good.	5	5	3	3	2	1	
Monmouth Pippin	Large	Yellow and red.	Nov. to Feb.	Good.	5	4	2	3	3	1	
Mother	Medium.	Yellow and red.	Nov. to Feb.	Best.	4	4	4	2	3	3	
Munson's Sweet	Medium.	Yellow	Oct. to Feb.	Good.	5	5	..	3	1	..	
Newtown Spitzenburgh (Vanderbere of N. Y.)	Medium.	Yellow and red.	Nov. to Feb.	Best.	5	3	4	4	4	5	
Northern Spy	Large	Green and red	Dec. to March	Very good.	5	4	5	5	5	5	
Ontario	Large.	Green and red	Dec. to March	Very good.	5	4	4	5	3	4	Likely to improve and become popular for export.
Peck's Pleasant.	Medium.	Green and yellow.	Dec. to March	Very good.	4	4	3	3	3	2	
Pennoch	Large.	Red and yellow.	Nov. to March	Good.	5	5	2	3	3	4	



COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS, SOIL, CULTIVATION, ETC.
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.	
HURON—Continued.											
Pewaukee	Large	Yellow and red striped	Dec. to April.	Good	5	4	2	3	2	3	
Phoenix	Large	Yellow and red striped	Dec. to March	Good	5	4	2	3	3	4	
Pomme Grise	Small	Green, russet and bluish cheek	Dec. to March	Very good	5	4	4	2	3	2	
Porter	Medium.	Yellow	Oct. to Dec.	Very good	5	4	3	3	2	2	
Priestly	Large	Red and green	Dec. to Feb.	Poor	4	4	1	2	1	2	
Primate	Medium	Light-green	Aug. to Oct. 1	Very good	5	5	4	3	4	1	
Pumpkin Russet	Large	Greenish russet	Sept. to Dec.	Good	4	3	1	3	3	2	
Pumpkin	Medium.	Light-green and red	Nov. to Jan.	Good	5	5	3	2	2	1	Water-cores badly and also spots in old uncultivated trees.
Rawles' Janet	Large	Yellow and red	Jan. to May.	Good	5	3	2	3	2	3	Will soon be entirely supplanted by Duchess.
Red Astrachan	Large	Red	August.	Good	5	4	1	4	3	4	
Red Canada	Medium.	Yellow and red	Dec. to April.	Good	4	5	3	4	3	4	
Red Russet	Large	Light russet	Dec. to March	Good	5	4	3	4	3	4	
Ribston Pippin	Medium.	Dull orange	Nov. to March	Very good	5	3	4	4	4	4	
Rhode Island Greening	Large	Green	Nov. to March	Very good	5	4	4	5	4	4	Subject to spotting unless soil well drained and rich.
Roxbury Russet	Medium.	Green and russet	Jan. to May.	Good	5	4	4	4	3	4	
Scarlet Pearmain	Medium.	Red and yellow	Aug. and Sept.	Good	5	4	3	3	1	1	
Shiawassa Beauty	Medium.	Red and yellow	Oct. to Dec.	Good	5	4	2	3	3	4	
Smokehouse	Medium.	Yellow and red	Sept. to Feb.	Good	4	4	1	3	2	2	
Sops of Wine	Medium.	Red and yellow	September.	Good	4	4	2	3	2	2	
St. Lawrence	Large	Green and red striped	Sept. to Nov.	Good	5	4	2	4	4	3	
Summer Rose	Small	Yellow and red splashed	August.	Very good	4	5	3	1	2	2	
Swaar	Medium.	Yellow when ripe	Dec. to Feb.	Very good	3	3	5	2	2	4	
Swayzie Pomme Grise	Small	Light russet	Jan. to June.	Best	5	3	5	3	5	5	
Talman Sweet	Medium.	Green and yellow	Nov. to March	Good	5	5	1	4	2	2	
Tetofsky	Medium.	Green and red striped	August.	Poor	5	5	1	3	1	1	
Twenty Ounce (Cayuga Red-streak)	Large	Green and red striped	Oct. to Jan.	Good	5	4	2	5	3	2	
Vanderere	Medium.	Yellow and red	Nov. to Jan.	Good	3	2	1	4	2	3	
Wagner	Medium.	Light-green and red	Dec. to Feb.	Very good	5	5	4	4	4	4	
Wealthy	Medium.	Red	Nov. to Feb.	Very good	5	4	4	4	4	4	
Westfield Seekno further	Medium.	Green and red	Nov. to Feb.	Very good	5	4	4	4	3	4	One of the best for cider.
Winesap	Medium.	Yellow and red	Dec. to April.	Good	5	4	3	4	2	3	

Yellow Bellflower.....		Large.....	Yellow.....	Dec. to Feb. .	Good.....	5	3	3	4	3	2
<i>Crab Apples.</i>											
Hyslop.....	Large.....	Large.....	Dark-red.....	Oct to Nov.....	Good.....	5	5	..	4	3	..
16 Large Red.....	Large.....	Large.....	Yellow and red.....	November.....	Good.....	5	4	..	3	2	..
Large Yellow.....	Large.....	Large.....	Yellow.....	November.....	Good.....	5	4	..	3	2	..
(F) Marengo.....	Large.....	Large.....	Yellow and red.....	Dec. to Feb. .	Hardly good.....	5	4	..	1	1	..
Montreal Beauty.....	Large.....	Large.....	Yellow and red.....	Sept. and Oct.	Good.....	3	4	..	5	4	..
Transcendant.....	Medium.....	Medium.....	Golden yellow.....	September.....	Good.....	5	4	..	4	3	..
Subject to blight.											
BRUCE. —											
Alexander.....	Very large.....	Very large.....	{ Greenish yellow, covered } with red.....	Sept. and Oct.	Good.....	5	3	1	3	4	..
American Golden Russet.....	Medium.....	Medium.....	Yellow and russet.....	Dec. to April..	Best.....	5	5	3	4	5	..
American Pippin (Grindstone).....	Medium.....	Medium.....	Green and red.....	Jan. to May.....	Good.....	4	3	..	3	1	2
American Summer Pearmain.....	Medium.....	Medium.....	Yellow and red.....	Aug. and Sept.	Very good.....	4	3	1	3	..	..
Bailey Sweet.....	Large.....	Large.....	Yellow and red.....	Nov. to Mar.....	Good.....	5	3	..	2	1	..
Baldwin.....	Large.....	Large.....	Red and green.....	Dec. to Mar.....	Very good.....	3	4	4	5	5	..
Beauty of Kent.....	Very large.....	Very large.....	Green, yellow and red.....	Sept. and Oct.	Good.....	4	3	..	4	2	..
Belmont.....	Large.....	Large.....	Waxen yellow.....	Nov. to Jan.....	Good.....	4	3	2	2	1	1
Ben Davis.....	Medium.....	Medium.....	Yellow and red.....	Dec. to Mar.....	Good.....	5	4	1	2	4	..
Benoni.....	Small.....	Small.....	Yellow and red.....	August.....	Very good.....	4	3	3	2	2	..
Blenheim Pippin.....	Large.....	Large.....	Orange.....	Oct. to Jan.....	Good.....	5	4	4	4	4	..
Cabashea (Twenty Oz. Pippin).....	Very large.....	Very large.....	Green and yellow.....	Dec. to Feb.....	Poor.....	5	5	1	4	2	3
Canada Reinette.....	Large.....	Large.....	Green and yellow.....	Dec. to April..	Very good.....	4	4	2	3	2	3
Chenango Strawberry.....	Medium.....	Medium.....	White and red.....	September.....	Good.....	5	4	3	2	3	..
Colvert.....	Large.....	Large.....	Yellow and red.....	Oct. and Nov.....	Good.....	5	5	3	4	3	..
Cornish Gilliflower.....	Medium.....	Medium.....	Green and yellow.....	Dec. to Mar.....	Good.....	4	2	2	2	1	1
Drap D'Or.....	Large.....	Large.....	Yellow.....	September.....	Good.....	4	2	2	3	2	..
Detroit Black.....	Large.....	Large.....	Dark red.....	September.....	Poor.....	4	2	..	1	1	..
Duchess of Oldenburgh.....	Medium.....	Medium.....	Yellow and red.....	July and Aug.....	Good.....	5	5	2	5	5	..
Early Harvest.....	Medium.....	Medium.....	Greenish yellow.....	July.....	Good.....	5	5	4	3	2	..
Early Joe.....	Small.....	Small.....	Yellow and red.....	August.....	Very good.....	4	3	4	..	2	..
Early Strawberry.....	Small.....	Small.....	Striped red.....	August.....	Very good.....	4	3	3	1	3	..
English Russet.....	Medium.....	Medium.....	Light russet.....	Jan. to May.....	Good.....	5	4	3	1	2	3
Esopus Spitzenburgh.....	Medium.....	Medium.....	Green and red.....	Dec. to Mar.....	Best.....	4	2	5	4	4	5
Fallawater.....	Very large.....	Very large.....	Greenish yellow.....	Dec. to Feb.....	Good.....	5	4	1	3	1	3
Fall Jenneting.....	Large.....	Large.....	Green and yellow.....	Sept. and Oct.	Good.....	4	4	1	3	2	1
Fall Pippin.....	Large.....	Large.....	Green and yellow.....	Oct. to Dec.....	Very good.....	5	4	3	4	3	1
Faneuse (Snow).....	Medium.....	Medium.....	Green and red.....	Oct. to Jan.....	Very good.....	5	5	4	3	4	2
Flushing Spitzenburgh.....	Medium.....	Medium.....	Red.....	Nov. to Feb.....	Good.....	4	3	3	1	3	4
Gloria Mundi.....	Very large.....	Very large.....	Greenish yellow.....	Nov. to Jan.....	Poor.....	5	2	..	3	2	1
Gravenstein.....	Large.....	Large.....	Yellow and red.....	Sept. and Oct.	Very good.....	5	4	4	4	3	..
Green Newtown Pippin.....	Medium.....	Medium.....	Green.....	Dec. to May.....	Best.....	4	2	5	..	2	5
Grimes' Golden Pippin.....	Medium.....	Medium.....	Yellow.....	Dec. to Mar.....	Very good.....	4	4	5	..	3	4
Hawley.....	Large.....	Large.....	Yellow.....	September.....	Good.....	4	3	2	3	2	..
Hawthornden.....	Medium.....	Medium.....	Yellow and red.....	September.....	Good.....	4	5	1	3	3	..
Holland Pippin.....	Large.....	Large.....	Green and yellow.....	Sept. to Nov.....	Good.....	4	3	1	4	3	1

## COUNTY REPORT ON VARIETIES OF APPLES GROWN IN ONTARIO.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS, SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
BRUCE—Continued.											
Hubbardston Nonesuch	Large	Yellow and red	Nov. to Jan.	Very good	5	4	4	3	3	4	
Jonathan.	Medium	Yellow and red	Dec. to Mar.	Very good.	4	4	3	1	3	3	
Kentish Fillbasket.	Very large.	Yellow and red	Sept. and Oct.	Good.	5	4	..	5	3	..	
Keswick Codlin.	Medium.	Green and yellow	Aug. and Sept.	Good.	4	4	..	5	3	..	
King of Tomkins County	Large	Yellow and red.	Nov. to Feb.	Very good.	4	4	4	4	4	5	
Late Strawberry	Medium.	Light green and red.	Oct. to Dec.	Very good.	4	4	4	1	2	3	
Maiden's Blush.	Medium.	Green, yellow, red	Sept. and Oct.	Good.	5	4	1	4	4	2	
Mann	Medium.	Dark green, yellow when ripe.	Jan. to April.	Very good.	5	4	3	4	3	4	
Monmouth Pippin	Large	Yellow and red	Nov. to Feb.	Good.	4	4	2	3	3	1	
Mother.	Medium.	Yellow and red	Nov. to Feb.	Best.	3	4	4	2	3	3	
Munson's Sweet.	Medium.	Yellow	Oct. to Feb.	Good.	4	4	..	3	1	..	
Newtown Spitzenburgh (Vanderbere of N. Y.)	Medium.	Yellow and red	Nov. to Feb.	Best	5	3	4	4	4	5	
Northern Spy.	Large	Green and red	Dec. to Mar.	Best	5	3	5	5	5	5	
Ontario.	Large	Green and red	Dec. to Mar.	Very good.	4	4	4	5	3	3	
Peck's Pleasant.	Medium.	Green and yellow	Dec. to Mar.	Very good.	3	4	3	3	3	2	
Phoenix	Large	Yellow and red	Dec. to Mar.	Good.	5	4	2	3	3	4	
Pomme Grise	Small	Green russet and bluish red.	Dec. to Mar.	Very good.	5	3	4	..	2	3	
Porter	Medium.	Yellow	Oct. to Dec.	Very good.	4	4	3	3	3	..	
Primat	Medium.	Light green.	Aug. to Oct.	Very good.	4	4	4	3	4	1	
Pumpkin Russet.	Large	Green and russet.	Sept. to Dec.	Good.	4	3	1	3	3	2	
Rambo.	Medium.	Light green and red.	Nov. to Jan.	Good.	4	4	3	2	2	..	
Red Astrachan	Large	Red	August.	Good.	5	4	1	4	3	..	
Red Canada.	Medium.	Yellow and red	Dec. to April.	Good.	4	5	3	4	3	4	
Ribston Pippin.	Medium.	Dull orange	Nov. to Mar.	Very good.	4	3	4	4	4	4	
Rhode Island Greening	Large	Green	Nov. to Mar.	Very good.	5	4	4	4	4	4	
Roxbury Russet	Medium.	Green and russet.	Jan. to May.	Good.	4	4	4	4	3	4	
St. Lawrence.	Large	Green and red	Sept. to Nov.	Good.	5	4	2	4	4	3	
Swaar	Medium.	Yellow	Dec. to Feb.	Very good.	3	3	5	2	2	4	
Swayzie Pomme Grise.	Small	Light russet	Jan. to June.	Best	5	2	5	..	3	5	
Talman Sweet.	Medium.	Green and yellow	Nov. to Mar.	Good.	5	5	..	2	4	2	
Twenty Ounce (Cayuga Red-streak)	Large	Green and red	Oct. to Jan.	Good.	5	4	2	5	3	3	
Vanderbere	Medium.	Yellow and red.	Nov. to Jan.	Good.	3	2	1	4	2	4	



Wagener.....	Medium.....	Light green and red.	Dec. to Feb....	Very good..	4	5	4	4	4	4
Westfield Seekno further	Medium.....	Green and red.	Nov. to Feb....	Very good..	5	4	4	4	3	4
Winesap.....	Medium.....	Yellow and red.	Dec. to April..	Good.....	4	4	3	4	2	3
Yellow Bellerose	Large.....	Yellow.....	Dec. to Feb....	Good.....	4	3	3	4	3	2
<i>Crab Apples.</i>										
Hyslop.....	Large.....	Dark red.....	Oct. and Nov..	Good.....	5	5	..	4	3	..
Large Red.....	Large.....	Yellow and red.	November.....	Good.....	5	4	..	3	2	..
Marengo.....	Large.....	Yellow and red.	Dec. to Feb....	Hardly good	4	4	..	1	1	..
Montreal Beauty	Large.....	Yellow and red.	Sept. and Oct..	Good.....	4	4	..	5	4	..
Transcendant.	Medium.....	Yellow.....	September.....	Good.....	5	4	..	4	3	..
GRET—										
Alexander.....	Very large.....	{ Greenish yellow, covered } with red.....	Sept. and Oct..	Good.....	5	4	2	4	..	3
American Golden Russet.	Medium.....	Yellow and russet.	Dec. to April..	Best.....	5	5	4	3	5	5
American Summer Pearmain	Medium.....	Yellow and red.	Aug. and Sept..	Very good..	3	3	3	1	3	..
Arnold's Beauty	Medium.....	Yellow, red and russet.	Dec. to April..	Good.....	4	3	2	2	1	2
Bailey Sweet.	Large.....	Yellow and red.	Nov. to March..	Good.....	4	3	..	2	1	..
Baldwin.....	Large.....	Red and green.	Dec. to March..	Very good..	4	5	4	4	4	5
Beauty of Kent.	Very large	Green, yellow, red.	Sept. and Oct..	Good.....	4	3	1	4	2	..
Belmont.....	Large.....	Waxen yellow.	Nov. to Feb....	Good.....	3	3	2	2	1	..
Ben Davis.....	Medium.....	Yellow and red.	Jan. to March..	Good.....	5	4	2	2	2	4
Benoni.....	Small.....	Yellow and red.	August.....	Very good..	4	2	3	..	1	..
Black Gillflower.	Medium.....	Dull red.....	Dec. to Feb....	Good.....	4	4	2	2	1	2
Blenheim Pippin.	Large.....	Orange.....	Oct. to Jan....	Good.....	4	4	4	4	4	4
Blue Pearmain.	Large.....	Dark red.....	Nov. to Feb....	Good.....	4	3	3	2	2	3
Bottle Greening.	Medium.....	Green and yellow.	Dec. to Feb....	Good.....	5	2	1	3	2	1
Bourassa.....	Medium.....	Orange, russet and yellow.	Nov. and Dec..	Good.....	4	3	2	2	4	..
Cabashea (Twenty Oz. Pippin)	Very large.	Green and yellow.	Dec. to Feb....	Poor.....	5	4	1	3	2	3
Canada Reinette.	Large.....	Green, yellow and brown.	Dec. to April..	Very good..	5	3	3	3	2	3
Chenango Strawberry.	Medium.....	White and red.	September.....	Good.....	4	4	3	1	3	..
Colvert.....	Large.....	Yellow and red.	Oct. and Nov..	Good.....	5	5	3	4	3	4
Cooper's Market.	Medium.....	Yellow and red.	Dec. to April..	Good.....	5	5	3	2	2	3
Cornish Gillflower.	Medium.....	Green and yellow.	Dec. to March..	Good.....	5	2	1	2	2	1
Drap D'Or.....	Large.....	Yellow.....	September.....	Good.....	3	2	2	3	2	..
Detroit Black.	Large.....	Dark red.....	September.....	Poor.....	5	2	..	1	1	..
Duchess of Oldenburgh	Medium.....	Yellow and red.	July and Aug..	Good.....	5	5	1	5	5	..
Early Harvest.	Medium.....	Greenish yellow.	August.....	Good.....	5	3	3	..	3	..
Early Joe.....	Small.....	Yellow and red.	August.....	Very good..	4	3	3	..	2	..
Early Strawberry.	Small.....	Striped red.....	Dec. to March..	Best.....	4	2	5	4	4	5
Esopus Spitzenburgh	Medium.....	Green and red.	Dec. to Feb....	Good.....	5	4	1	3	1	3
Fallwater.....	Very large	Greenish yellow.	Sept. and Oct..	Good.....	4	3	2	3	2	1
Fall Jenneting.....	Large.....	Green and yellow.	Oct. to Dec....	Very good..	5	4	2	4	3	1
Fall Pippin.....	Large.....	Green and yellow.	Oct. to Jan....	Very good..	5	5	4	4	3	..
Faneuse (Snow)	Medium.....	Green and red.	Nov. to Feb....	Good.....	4	3	3	1	3	4
Flushing Spitzenburgh	Medium.....	Red.....	Nov. to Jan....	Good.....	5	2	..	..	..	..
Gloria Mundi.	Very large	Greenish yellow.	Nov. to Jan....	Poor.....	5	2	..	..	..	..

## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS, SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
GREY—Continued.											
Golden Russet (N.Y.)	Medium	Russet	Dec. to March.	Very good	4	3	4	4	3	4	
Gravenstein	Large	Yellow and red	Sept. and Oct.	Very good	5	4	4	4	4	2	
Green Newtown Pippin	Medium	Green	Dec. to May	Best	4	2	5	..	2	5	
Grimes' Golden Pippin	Medium	Yellow	Dec. to March	Very good	4	4	5	..	4	4	
Hawley	Large	Yellow	September	Good	3	3	2	3	2	..	
Hawthornden	Medium	Yellow and red	September	Good	4	5	1	3	2	..	
Holland Pippin	Large	Green and yellow	Sept. to Nov.	Good	4	3	1	4	3	1	
Hubbardston Nonesuch	Large	Yellow and red	Nov. to Jan.	Very good	5	4	4	3	3	4	
Kentish Fillbasket	Very large	Yellow and red	Sept. and Oct.	Good	5	3	..	4	3	..	
Keswick Codlin	Medium	Green and yellow	Aug. to Oct.	Good	5	4	..	5	3	..	
King of Tompkins Co.	Large	Yellow and red	Nov. to Feb.	Very good	4	3	4	4	4	5	
Lake Strawberry	Medium	Green and red	Oct. to Dec.	Very good	4	3	4	1	2	3	
Maiden's Blush	Medium	Green, yellow and red	Sept. and Oct.	Good	5	4	0	4	4	3	
Mann	Medium	Yellow	Jan. to April	Very good	5	3	4	4	3	4	
Monmouth Pippin	Large	Yellow and red	Nov. to Feb.	Good	5	3	2	3	3	1	
Mother	Medium	Yellow and red	Nov. to Feb.	Best	4	3	4	2	3	3	
Munson's Sweet	Medium	Yellow	Oct. to Feb.	Good	5	4	..	3	1	..	
Newtown Spitzenburgh (Vanderbere of N.Y.)	Medium	Yellow and red	Nov. to Feb.	Best	4	3	4	4	4	5	
Northern Spy	Large	Green and red	Dec. to March	Best	4	3	5	5	5	5	
Ontario	Large	Green and red	Dec. to March	Very good	4	4	4	5	3	4	
Peck's Pleasant	Medium	Green and yellow	Dec. to March	Very good	5	3	3	3	3	2	
Pennock	Large	Red and yellow	Nov. to March	Good	5	4	2	3	3	4	
Phenix	Large	Yellow and red	Dec. to March	Good	5	4	2	3	3	4	
Pomme Grise	Small	Green, russet and blush cheek	Dec. to March	Very good	5	4	4	..	2	3	
Porter	Medium	Yellow	Oct. to Dec.	Very good	4	4	3	3	3	2	
Primate	Medium	Light green	Aug. to Oct.	Very good	5	4	4	3	3	4	
Pumpkin Russet	Large	Greenish russet	Sept. to Dec.	Good	5	3	1	3	3	2	
Rambo	Medium	Light green and red	Nov. to Jan.	Good	5	5	3	2	2	1	
Rawles' Janet	Large	Yellow and red	Jan. to May	Good	4	3	2	3	3	3	
Red Astrachan	Large	Red	August	Good	5	4	2	4	3	..	
Red Canada	Medium	Yellow and red	Dec. to April	Good	4	4	3	4	3	4	
Ribston Pippin	Medium	Dull orange	Nov. to March	Very good	5	3	4	4	4	4	
Rhode Island Greening	Large	Green	Nov. to March	Very good	4	4	..	5	5	4	





COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
SIMCOE—Continued.											
Hurlbut.....	Medium.....	Green.....	January.....	Best.....	2	1	5	3	5	...	Think will do well here, but wants further trial; a shy bearer.
Irish Peach.....	Medium.....	Yellow.....	August.....	Good.....	4	1	3	4	4	...	
Jersey Sweeting.....	Medium.....	Green.....	October.....	Good.....	4	4	4	4	3	...	
Jonathan.....	Medium to small.....	Yellow and red.....	Dec. to March.....	Good.....	4	5	4	2	3	...	Succeeds well here; a good winter apple.
Kentish Fillbasket.....	Very large.....	Yellow.....	November.....	Good.....	3	3	3	4	4	1	
Keswick Codlin.....	Medium.....	Yellow.....	September.....	Good.....	3	3	2	3	4	1	
King of Tompkins Co.....	Large.....	Green and striped red.....	Nov. to Jan.....	Good.....	4	4	1	4	5	1	A failure with some, and does well with others.
Late Strawberry.....	Medium.....	Yellow striped.....	Oct. to March.....	Good.....	4	4	4	3	4	...	
Lowell.....	Large.....	Yellow.....	October.....	Good.....	4	4	2	2	5	1	
Maiden's Blush.....	Medium.....	Yellow red cheek.....	Nov. to Jan.....	Very good.....	4	3	3	3	4	...	
Macintosh Red.....	Medium.....	Red.....	March.....	Very good.....	5	4	4	3	5	2	
Munson's Sweet.....	Large.....	Green.....	October.....	Good.....	3	3	2	2	2	...	
Newtown Spitzenburgh (Vanderbere of N. Y.).....	Medium to large.....	Red and yellow.....	Oct. to Feb.....	Best.....	3	2	4	4	5	5	
Northern Spy.....	Large.....	Yellow, green and red.....	Jan. to May.....	Best.....	5	5	4	5	5	5	
Ontario.....	Medium.....	Yellow with striped red.....	Jan. to April.....	Best.....	5	5	4	5	5	5	Not sufficiently tested here at present.
Pek's Pleasant.....	Large.....	Green.....	January.....	Good.....	5	5	3	4	4	...	
Pewaukee.....	Medium.....	Yellow.....	September.....	Good.....	4	4	4	4	4	...	
Pomme Grise.....	Small.....	Yellow russet.....	June.....	Best.....	4	4	5	4	4	...	
Porter.....	Medium.....	Yellow.....	September.....	Very good.....	5	5	4	5	4	...	
Pumpkin Russet.....	Large.....	Brown.....	October.....	Good.....	3	3	1	2	3	...	
Rambo.....	Small.....	Green.....	March.....	Very good.....	4	4	2	3	4	...	
Red Astrachan.....	Medium to large.....	Red and green.....	August.....	Best.....	5	5	5	4	5	...	Has done exceedingly well, where top grafted.
Red Belflower.....	Medium to large.....	Green and red.....	Nov. to March.....	Good.....	5	3	5	3	4	4	
Ribston Pippin.....	Medium.....	Yellow red russet.....	Dec. to March.....	Very good.....	3	3	3	3	4	...	Trees fail on light soils.
Rhode Island Greening.....	Medium.....	Green.....	February.....	Very good.....	3	3	3	4	4	...	
Roxbury Russet.....	Medium.....	Russet.....	June.....	Good.....	3	3	3	4	5	...	
Simcoe or Red Pound.....	Large to very large.....	Red and brown.....	Jan. to May.....	Good.....	5	4	3	4	5	...	Needs to be further tested.
St. Lawrence.....	Medium large.....	Green streaked with crimson.....	Sept. and Oct.....	Very good.....	5	5	3	5	5	...	
Sweet Bough (Large Yellow Bough).....	Large.....	Yellow.....	September.....	Very good.....	3	2	3	4	5	...	
Swayzie Pomme Grise.....	Medium small.....	Russet.....	June.....	Best.....	5	5	5	5	5	5	

Talman Sweet .....	Medium .....	Yellow and green .....	May .....	Good .....	5	5	3	3	3	Very hardy tree, bears heavy crops of fruit.
Tetofsky .....	Medium .....	Yellow and red .....	Aug. and Sept. ....	Poor .....	4	5	2	2	2	
Twenty Ounce (Cayuga Red-streak) .....	Large .....	Green streaked with red .....	Oct. to Dec. ....	Good .....	4	4	1	2	3	
Wagner .....	Medium .....	Red streaked .....	Jan. to March .....	Very good .....	2	3	5	4	5	
Walbridge .....	Small .....	Brown .....	June .....	Good .....	5	5	4	3	2	
Wealthy .....	Medium .....	Red on yellow .....	January .....	Good .....	5	4	4	2	4	Not sufficiently tried; supposed to be very hardy.
Westfield Seekno further .....	Medium .....	Yellow red russet .....	Jan. to May .....	Very good .....	5	5	5	4	5	
White Astrachan .....	Medium large .....	White yellow .....	Aug. and Sept. ....	Good .....	4	3	3	4	4	
Williams' Favourite .....	Medium large .....	Red .....	Aug. and Sept. ....	Good .....	5	5	4	4	5	
Yellow Belflower .....	Large .....	Yellow .....	Dec. to March .....	Very good .....	4	4	3	4	4	
Yellow Newtown Pippin .....	Medium .....	Yellow and brown .....	Nov. to Jan. ....	Very good .....	3	2	4	4	4	
<i>Crab Apples.</i>										
Hyslop .....	Large .....	Dark red and orange .....	December .....	Good .....	5	5	1	3	4	
Montreal Beauty .....	Large .....	Reddish .....	October .....	Very good .....	3	5	1	5	5	
Transcendent .....	Large .....	Yellow and crimson .....	October .....	Good .....	5	5	1	5	5	
Siberian .....	Small .....	Yellow and red .....	October .....	Poor .....	5	5	1	5	5	The stock is good for top grafting tender varieties on.
CARDWELL—										
American Golden Russet .....	Medium .....	Russet .....	June .....	Very good .....	4	4	3	5	5	Clay loam.
American Summer Pearmain .....	Large .....	Pink .....	September .....	Best .....	4	4	5	5	4	Clay "
Baldwin .....	Large .....	Reddish green .....	September .....	Best .....	3	5	3	5	5	Clay loam; cultivation good.
Duchess of Oldenburgh .....	Large .....	Red, streaked with pale yellow .....	September .....	Best .....	5	4	5	4	5	
Early Harvest .....	Large .....	Yellow .....	August .....	Best .....	5	4	5	4	5	
Fameuse (Snow) .....	Large .....	{ Red, green streaked on } .....	February .....	Best .....	5	4	5	1	4	Sandy loam.
Northern Spy .....	Large .....	Streaked on sunny side .....	October .....	Best .....	4	4	4	5	5	"
Rambo .....	Large .....	Red, streaked on one side .....	March .....	Very good .....	4	4	3	4	4	
Red Astrachan .....	Large .....	Red .....	August .....	Good .....	4	4	4	4	4	Clay loam.
Rhode Island Greening .....	Large .....	Green .....	May .....	Best .....	4	4	4	5	5	"
Roxbury Russet .....	Large .....	Russet .....	May .....	Good .....	4	2	3	4	4	
St. Lawrence .....	Large .....	Red, streaked .....	October .....	Best .....	4	4	3	4	4	
Talman Sweet .....	Medium .....	Yellowish green .....	June .....	Very good .....	5	5	3	3	3	
Twenty Ounce (Cayuga Red-streak) .....	Large .....	Red, streaked .....	November .....	Very good .....	5	5	3	4	5	Clay loam.
<i>Crab Apples.</i>										
Large Red .....	Large .....	Red .....	.....	.....	5	4	4	4	4	Sandy loam.
Large Yellow .....	Large .....	Yellow .....	.....	.....	5	4	4	4	4	Clay loam.
Transcendent .....	Large .....	.....	.....	.....	5	5	1	5	5	
Siberian .....	Large .....	.....	.....	.....	5	5	1	5	5	

## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.		
YORK—												
Alexander.....	Very large.	Striped.....	Fall.....	Good.....	4	3	2	5	5	1		
American Golden Russet.....	Medium.	Russet.....	Winter.....	Good.....	5	5	5	2	5	5		
Bailey Sweet.....	Very large.	Striped.....	Early winter.....	Good.....	4	5	2	1	2	3		
Baldwin.....	Large.	Brown red.....	Late winter.....	Good.....	1	5	5	5	5	5		
Ben Davis.....	Large.	Striped.....	Winter.....	Poor.....	5	5	2	2	3	4		
Benoni.....	Medium.	Deep red.....	August.....	Good.....	3	3	4	5	3			
Canada Reinette.....	Very large.	Green yellow.....	May.....	Good.....	5	4	1	4	4	3		
Colvert.....	Large.	Striped.....	November.....	Very good.....	5	5	3	5	4			
Duchess of Oldenburgh.....	Medium to large.	Striped.....	September.....	Very good.....	5	5	5	5	3			
Early Harvest.....	Medium.	Yellow.....	August.....	Good.....	5	3	5	3	3			
Esopus Spitzenburgh.....	Medium.	Red.....	April.....	Best.....	3	2	5	5	5	4		
Fallowater.....	Very large.	Dull red.....	February.....	Good.....	5	4	1	4	3			
Fall Jemmett.....	Large.	Green yellow.....	November.....	Good.....	4	5	2	5	3			
Fall Pippin.....	Very large.	Yellow.....	December.....	Very good.....	5	4	1	5	4			
Fameuse (Snow).....	Medium.	Red.....	January.....	Good.....	5	5	5	2	3			
Gloria Mundi.....	Very large.	Green.....	February.....	Good.....	4	3	1	4	3			
Gravenstein.....	Large.	Striped.....	October.....	Very good.....	4	4	1	5	3			
Grimes' Golden Pippin.....	Medium.	Yellow.....	April.....	Very good.....	5	3	2	4	4			
Haas.....	Medium.	Red.....	January.....	Good.....	4	5	3	4				
Hastings.....	Medium.	Yellow.....	February.....	Good.....	5	4	3	5				
Hubbardston Nonesuch.....	Large.	Striped.....	May.....	Good.....	3	4	2	4	5			
Kentish Fillbasket.....	Very large.	Yellow.....	January.....	Very good.....	4	4	3	5	5			
Keswick Codlin.....	Large.	Yellow.....	September.....	Good.....	4	5	4	5	4			
King of Tompkins Co.....	Large.	Striped.....	May.....	Good.....	4	4	3	4	4	3		
Lady.....	Small.	Yellow.....	May.....	Very good.....	3	5	5		4			
Maiden's Blush.....	Medium to large.	Yellow.....	January.....	Good.....	5	5	3	5	3			
Mann.....	Medium.	Striped.....	June.....	Best.....	5	5	4	5	5	4		
Northern Spy.....	Large.	Russet.....	May.....	Very good.....	5	5	5	1	3	5		
Pomme Grise.....	Small.	Russet.....	March.....	Good.....	5	4	2	2	3			
Pumpkin Russet.....	Medium.	Striped.....	February.....	Good.....	3	3	4	4	3			
Rambo.....	Medium.	Streaked.....	February.....	Good.....	3	3	3	5	5	5		
Red Astrachan.....	Large.	Red.....	August.....	Best.....	5	5	3	5	5	5		
Red Canada.....	Medium.	Red.....	May.....	Very good.....	5	4	2	5	5	5		
Ribston Pippin.....	Large.	Yellow russet.....	February.....	Good.....	4	4	4	3	4	5		



Rhode Island Greening.	Large	Green	May	Very good.	3	5	2	5	4
Roxbury Russet	Medium	Russet	July	Poor	3	4	1	3	3
St. Lawrence.	Large	Streaked	November	Good.	5	4	1	4	4
Sweet Rough (Large Yellow Bough).	Large	Yellow	September	Good	4	5	1	2	3
Swayzie Pomme Grise	Small	Russet	June	Best	5	5	5	1	4
Talman Sweet.	Medium	Yellow	May	Good.	4	5	3	4	4
Tetofsky	Medium	Yellow	August.	Very good.	5	4	3	5	4
Twenty Ounce (Cayuga Red-streak)	Very large.	Streaked	January	Good.	3	4	2	5	3
Wagner.	Medium	Red	April	Very good.	3	5	4	5	4
Weatherly	Medium	Red	February.	Very good.	5	4	5	3	4
Westfield Seekno further	Medium	Streaked	February.	Very good.	3	5	4	4	3
Yellow Belflower	Large	Yellow	April	Good	4	4	2	5	3
<i>Crab Apples.</i>									
Hyslop.	Large	Red	December	Good.	5	3			
Transcendent.	Large	Yellow	October	Very good.	5	5			
<i>SOUTH ONTARIO—</i>									
Alexander	Very large.	Red	October	Good	4	4	3	3	4
American Golden Russet.	Medium	Russet	February	Best	4	4	3	5	5
American Pippin (Grindstone)	Medium	Red	March	Poor	4	4	1	4	4
Bailey Sweet	Large.	Red	December	Good	4	3	2	1	3
Baldwin.	Large.	Red	January	Very good.	4	4	3	5	5
Beauty of Kent.	Very large.	Yellow	October.	Good	4	3	2	4	4
Ben Davis.	Large	Red	February.	Poor	4	4	2	5	5
Benoni.	Medium	Red	August	Good.	4	3	3	3	3
Black Gillflower.	Small	Brown	December	Poor	4	2	1	2	2
Blenheim Pippin.	Large	Yellow	October	Good	4	3	3	3	3
Blue Pearmain.	Large	Brown	November	Good	4	3	2	3	4
Bottle Greening.	Medium	Green	January	Good.	4	3	3	3	3
Cabasheta (Twenty oz. Pippin)	Very large	Green	December	Very good.	4	3	4	4	4
Canada Reimette.	Large	Green	December	Good	4	3	3	4	4
Carolina Red June	Medium	Red	August.	Good	4	3	4	3	3
Chenango Strawberry	Medium	Red	September	Very good.	4	4	4	4	4
Colvert.	Large	Green	October	Very good.	4	4	4	4	4
Cooper's Market.	Medium	Red	December	Good	4	4	3	3	3
Cornish Gillflower	Medium	Green	November	Very good.	4	3	4	3	3
Cranberry Pippin.	Medium	Yellow	November	Very good.	4	3	4	3	3
Drap D'Or.	Large	Yellow	September	Good	4	3	2	4	4
Detroit Black.	Medium	Brown	October	Good	3	4	3	2	2
Duchess of Oldenburgh.	Medium	Yellow	September	Good	4	4	3	4	4
Early Harvest.	Medium	Yellow	August.	Best	4	4	5	4	4
Early Joe	Medium	Red	August.	Very good.	4	3	4	3	3
Early Strawberry.	Medium	Yellow	August.	Very good.	4	4	4	3	3
Esopus Spitzenburgh.	Medium	Red	November	Best	2	2	5	4	4
Fallawater.	Very large.	Red	November	Good	4	4	3	4	4

## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.		
SOUTH ONTARIO—Continued.												
Fall Jenetting	Large	Green.	November	Very good.	5	4	4	4	3	3		
Fall Pippin	Very large	Yellow	October	Very good.	4	4	4	4	4	4		
Fameuse (Snow)	Medium.	Red	November	Best.	5	4	5	5	4	4		
Flushing Spitzenburgh.	Medium.	Red	November	.....	3	3	4	4	4	4		
Gloria Mundi.	Very large.	Yellow	December	Good.	4	3	3	3	4	4		
Golden Russet (N. Y.)	Small	Russet	November	Best.	4	4	5	4	5	5		
Golden Sweet.	Large	Yellow	August.	Very good.	4	4	4	2	3	3		
Gravenstein	Large	Yellow	September	Very good.	4	4	4	4	4	4		
Haas.	Medium.	Green	September	Good.	4	5	4	4	4	4		
Hawthornden.	Medium.	Yellow	October	Good.	4	3	4	3	3	3		
Hubbardston Nonesuch	Large	Brown	November	Good.	4	4	4	3	4	4		
Jersey Sweeting	Medium.	Red	September	Very good.	4	4	3	2	3	3		
Jonathan.	Medium.	Yellow	November	Good.	4	3	3	3	3	3		
Kentish Fillbasket.	Very large.	Yellow	November	Good.	3	3	3	4	4	4		
Keswick Codlin.	Medium.	Green	October	Good.	4	3	2	3	2	2		
King of Tompkins Co.	Large	Red.	November	Best.	4	4	5	5	5	5		
Lady.	Small	Yellow	December	Very good.	4	4	3	2	1	1		
Late Strawberry	Medium.	Red.	November	Very good.	5	4	4	4	4	4		
Maiden's Blush.	Medium.	Yellow	September	Good.	4	4	3	4	3	3		
Monmouth Pippin.	Large	Green.	March	Good.	4	4	3	4	4	4		
Munson's Sweet	Large	Yellow	October	Good.	4	3	3	1	2	1		
Northern Spy.	Large	Green.	November	Very good.	4	4	4	5	5	5		
Ontario.	Medium.	Yellow	November	Very good.	4	3	3	4	4	4		
Peck's Pleasant.	Large	Yellow	November	Good.	4	4	3	4	4	4		
Pomme Grise	Small	Russet	November	Very good.	4	3	3	3	3	3		
Porter.	Medium.	Yellow	September	Best.	4	4	4	4	4	4		
Primat.	Large	Yellow	August.	Best.	4	4	5	5	4	4		
Pumpkin Russet.	Large	Yellow	October	Good.	4	3	3	1	3	3		
Rambo.	Medium.	Yellow	December	Good.	3	3	3	3	2	2		
Red Astrachan	Large	Red.	August.	Good.	5	4	3	4	3	3		
Red Canada.	Medium.	Red	January.	Good.	4	4	3	4	4	4		
Ribston Pippin.	Large	Yellow	November.	Very good.	4	3	4	4	4	4		
Rhode Island Greening.	Large	Green	December.	Best.	5	5	5	5	5	5		
No sale for this apple here last fall; barrels lay on the ground and rotted.												

No sale for this apple here last fall; barrels lay on the ground and rotted.

Roxbury Russet	Medium	Brown	December	Good	4	5	1	1	5	5
Sops of Wine	Medium	Red	August	Good	4	4	4	4	3	3
St. Lawrence	Large	Red	October	Very good	4	3	3	4	4	4
Swar	Large	Yellow	December	Best	4	3	5	4	4	4
Requires the best of cultivation.										
Sweet Bough (Large Yellow Bough)	Large	Yellow	August	Very good	4	3	4	3	3	3
Swayzie Pomme Grise	Small	Russet	January	Best	4	4	5	4	5	5
Talman Sweet	Medium	Yellow	December	Very good	5	5	4	5	4	4
Tetofsky	Medium	Yellow	July	Good	4	4	3	2	3	3
Twenty Ounce (Cayuga Red-streak)	Very large	Yellow	November	Good	4	3	3	5	5	5
Vandevere	Medium	Yellow	December	Good	4	4	4	3	4	4
Wagner	Medium	Red	December	Very good	3	5	4	4	4	4
The fruit on these trees want to be thinned out to get the best results.										
Walbridge	Medium	Yellow	March	Good	5	4	3	3	3	3
Wealthy	Medium	Yellow	December	Very good	4	5	3	3	4	4
Westfield Seekno further	Medium	Russet	November	Good	4	4	3	3	4	4
Williams' Favourite	Medium	Red	August	Good	4	3	3	3	3	3
Winesap	Medium	Red	December	Good	4	5	3	3	4	4
Yellow Belflower	Large	Yellow	December	Very good	4	4	4	4	4	4
Yellow Newtown Pippin	Large	Yellow	February	Very good	4	3	4	4	4	4
<i>Crab Apples.</i>										
Hyslop	Large	Red	December	Very good	5	5	4	4	5	5
Large Red	Small	Red	September	Good	5	5	1	2	1	1
Large Yellow	Small	Yellow	September	Good	5	5	1	1	1	1
Marengo	Large	Yellow	January	Good	5	4	2	3	3	3
Montreal Beauty	Large	Yellow	October	Very good	5	4	4	4	4	4
Transcendent	Very large	Yellow	September	Best	5	5	5	5	5	5
Whitney's No. 20	Large	Green	October	Good	5	4	3	3	3	3
Siberian	Small	Yellow	October	Poor	5	4	1	1	1	1
This crab won't sell here, the colour is against it.										
NORTH ONTARIO—										
Alexander	Large	Yellow and red	Fall	Poor	1	1	1	1	1	1
American Golden Russet	Small	Red and yellow russet	Jan. to May	Good	1	1	1	1	1	1
Baldwin	Medium	Dark red	March	Good	1	1	1	1	1	1
Rather tender in cold locations, particularly while growing.										
Ben Davis	Medium	Red	Feb. to July	Good	1	1	1	1	1	1
Colvert	Medium	Yellow and red	November	Good	1	1	1	1	1	1
Duchess of Oldenburgh	Medium to large	Yellow and red	Aug. and Sept.	Good	1	1	1	1	1	1
Early Harvest	Medium	Yellow	July	Good	1	1	1	1	1	1
Esopus Spitzenburgh	Large	Yellow and red	January	Good	1	1	1	1	1	1
Faneuse (Snow)	Small	Red	December	Good	1	1	1	1	1	1
Golden Russet (N.Y.)	Small	Dull yellow russet	Jan. to June	Good	1	1	1	1	1	1
Gravenstein	Large	Yellow and red	October	Good	1	1	1	1	1	1
Grimes' Golden Pippin	Medium	Yellow	February	Very good	1	1	1	1	1	1
Haas	Medium to large	Yellow and red	November	Good	1	1	1	1	1	1
Spots badly here; good grower.										
Tree a very strong grower; hardy.										

NOTE.—The apple is not extensively cultivated in North Ontario, though most farms have small orchards.



## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.	
NORTH ONTARIO—Continued.											
Hurlbut.....	Medium.....	Yellow and red.....	December.....	Good.....	1	1	1	1	1	1	Strong grower.
King of Tompkins Co.....	Large.....	Red.....	January.....	Best.....	1	1	1	1	1	1	Tender while young; a hard tree to grow in nursery.
Mann.....	Medium.....	Green.....	Jan. to May.....	Good.....	1	1	1	1	1	1	Tree a good grower; stands the winter.
Northern Spy.....	Large.....	Red and green.....	Jan. to June.....	Very good.....	1	1	1	1	1	1	The tree grows well here on any kind of good soil.
Pewaukee.....	Medium.....	Yellow and red.....	Feb. to May.....	Very good.....	1	1	1	1	1	1	
Pomme Grise.....	Small.....	Russet.....	February.....	Very good.....	1	1	1	1	1	1	
Red Astrachan.....	Medium.....	Red.....	August.....	Good.....	1	1	1	1	1	1	
Ribston Pippin.....	Medium.....	Yellow and red.....	January.....	Very good.....	1	1	1	1	1	1	Does best on light soil.
Rhode Island Greening.....	Large.....	Green.....	January.....	Best.....	1	1	1	1	1	1	
Roxbury Russet.....	Large.....	Yellow russet.....	June.....	Good.....	1	1	1	1	1	1	
St. Lawrence.....	Large.....	Red and green.....	November.....	Good.....	1	1	1	1	1	1	
Talman Sweet.....	Medium.....	Whitish yellow.....	March.....	Fair.....	1	1	1	1	1	1	
Tetofsky.....	Medium.....	Whitish yellow.....	August.....	Poor.....	1	1	1	1	1	1	
Twenty Ounce (Cayuga Red-streak).....	Very large.....	Yellow and red.....	Dec. to Jan.....	Good.....	1	1	1	1	1	1	
Wagener.....	Small.....	Red and yellow.....	January.....	Good.....	1	1	1	1	1	1	Not much grown here; tree very hardy.
Walbridge.....	Medium.....	Red.....	March.....	Very good.....	1	1	1	1	1	1	Tree a good grower; seems perfectly hardy; new here.
Wealthy.....	Medium.....	Red.....	January.....	Good.....	1	1	1	1	1	1	
Williams' Favourite.....	Large.....	Red.....	August.....	Good.....	1	1	1	1	1	1	Does best on light soil.
Yellow Belflower.....	Large.....	Yellow.....	January.....	Very good.....	1	1	1	1	1	1	
Crab Apples.											
Hyslop.....	Large.....	Blue.....	October.....	Very good.....	1	1	1	1	1	1	
Transcendent.....	Large.....	Red.....	October.....	Best.....	1	1	1	1	1	1	
FRONTENAC—											
Alexander.....	Very large.....	Red.....	October.....	Good.....	2	4	1	5	5	5	Clay loam well drained; best winter apple for this country.
American Golden Russet.....	Below medium.....	Dull yellow.....	Oct. to Jan.....	Best.....	5	5	1	5	5	5	



## COUNTY REPORTS ON VARIETIES OF APPLES GROWN IN ONTARIO.—Continued.

VARIETIES. CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.		
FRONTENAC—Continued.												
Montreal Beauty	Large	Yellow to red	Sept. and Oct.	Best	5	5	5	5	5	5	Clay loam.	
Transcendent	Medium to large	Golden yellow to crimson	Sept. and Oct.	Good	5	5	5	5	5	5		
Siberian	Small	Yellow	September	Very good	5	5	5	5	5	5		
LEEDS—												
Alexander	Very large	Red	November	Good	5	5	5	5	5	5		
American Golden Russet	Medium	Russet	June	Best	5	5	5	5	5	5		
Bailey Sweet	Large	Red	December	Good	5	5	5	5	5	5		
Baldwin	Large	Brown and red	March	Best	5	5	5	5	5	5		
Ben Davis	Medium	Light red	March	Good	5	5	5	5	5	5		
Benoni	Medium	Red	October	Good	5	5	5	5	5	5		
Colvert	Large	Red cheek	December	Very good	5	5	5	5	5	5		
Duchess of Oldenburgh	Large	Red and yellow	September	Good	5	5	5	5	5	5		
Early Harvest	Medium	Yellow	August	Very best	5	5	5	5	5	5		
Early Joe	Small	Red and yellow	August	Very best	5	5	5	5	5	5		
Early Strawberry	Medium	Red and yellow	September	Good	5	5	5	5	5	5		
Esopus Spitzenburgh	Medium	Red and green	June	Best	5	5	5	5	5	5		
Fameuse (Snow)	Medium	Red	January	Best	5	5	5	5	5	5		
Golden Russet (N. Y.)	Small	Bright russet	June	Very best	5	5	5	5	5	5		
Gravenstein	Large	Striped red	October	Best	5	5	5	5	5	5		
Maiden's Blush	Medium	Red and yellow	December	Very best	5	5	5	5	5	5		
Melon	Medium	Yellow	April	Very best	5	5	5	5	5	5		
Northern Spy	Large	Red	April	Very best	5	5	5	5	5	5		
Red Astrachan	Medium	Red	August	Good	5	5	5	5	5	5		
Rhode Island Greening	Large	Green	April	Very best	5	5	5	5	5	5		
St. Lawrence	Large	Red and green	October	Very best	5	5	5	5	5	5		
Talman Sweet	Medium	Yellow	April	Very best	5	5	5	5	5	5		
Yellow Beltflower	Large	Yellow	April	Best	5	5	5	5	5	5		
Crab Apples.												
Hyslop	Medium	Dark red	October	Good	5	5	1	5	5	5		
Montreal Beauty	Large	Bright yellow	October	Good	5	5	1	5	5	5		
Transcendent	Large	Gold yellow	October		5	5	1	5	5	5		



## DUNDAS AND STORMONT—

DUNDAS AND STORMONT—										
Alexander	Large	Red	March	Good	5	3	3	...	Does very good, grafted in old trees.	
American Golden Russet	Medium	Grey	March	Good	...	...	...	...		
Baldwin	Very large	Brown	March	Good	5	4	4	...	White spotted.	
Ben Davis	Medium	Red	February	Good	5	3	4	...	Very hardy and bears well.	
Bethel	Large	Red striped	March	Good	5	5	4	5	Very hardy.	
Duchess of Oldenburgh	Large	Red	September	Very good	5	5	5	...	The best paying apple until these last two	
Early Harvest	Medium	Yellow	September	Best	5	5	5	4	years—they have spotted badly.	
Fameuse (Snow)	Medium	Red	December	Good	5	4	4	...	Not much grown yet.	
Irish Peach	Medium	Brown	February	Good	5	4	4	...	Spots and cracks bad.	
King of Tompkins Co.	Large	Yellow	January	Good	4	2	...	...	Stands the climate, but short-lived.	
Maiden's Blush	Medium	Red	January	Poor	...	...	...	...	White spots.	
Macintosh Red	Medium	Red	March	Very good	3	3	...	5	Good apple and tree hardy, but does not bear	
Northern Spy	Very large	Red	February	Good	5	4	4	...	well.	
Pewaukee	Large	Red striped	February	Good	3	3	...	5	Short-lived.	
Pomme Grise	Small	Russet	August	Good	1	4	...	...	About the best sweet apple.	
Red Astrachan	Medium	Red	March	Very good	...	...	...	...	About the hardest winter apple.	
Red Canada	Medium	Red	September	Good	5	5	4	5	The best.	
St. Lawrence	Medium	Russet	April	Very good	...	...	...	...		
Swayzie Pomme Grise	Small	Yellow	February	Good	5	...	...	...		
Talman Sweet	Medium	Brown	February	Good	4	3	2	4		
Westfield Seekno further	Medium	Yellow	February	Good	5	4	4	2		
Yellow Bellflower	Medium	Yellow	February	Good	5	4	4	2		
Crab Apples.										
Transcendent	Small	...	...	Poor	...	...	...	...		
Siberian	Small	...	...	...	...	...	...	...		
RUSSELL—										
Alexander	Very large	Red	September	Good	5	4	3	4	5	Very hardy.
Brockville Beauty	Large	Red	September	Good	4	4	4	4	5	Not sufficiently hardy except in favoured
Duchess of Oldenburgh	Large	Red cheek	September	Good	5	4	4	4	5	sections.
Fameuse (Snow)	Small	Red	Oct. to Dec.	Best	3	3	5	5	...	Being introduced. Very hardy.
Grimes' Golden Pippin	Small	Russet	Winter	Best	4	4	5	...	4	
Red Astrachan	Medium	Red	Aug. and Sept.	Very good	4	4	4	5	4	
Talman Sweet	Medium	Green	Oct. to May	Good	3	4	3	4	3	
Wealthy	Med. and large	Red and green	Sept. to Feb.	Good	5	5	5	4	5	
Crab Apples.										
Hyslop	Large	Red	Sept. to Nov.	Good	5	4	1	3	3	Not yet fruited
Montreal Beauty	Large	Red cheek	September	Good	5	4	3	4	3	
Transcendent	Medium	Red cheek	September	Good	5	5	4	5	4	
Whitney's No. 20	Very large	...	...	...	5	...	...	...	...	

## Crab Apples.

## RUSSELL—

## Crab Apples.



Green Newton Pippin.....	Medium.....	Reddish.....	Winter.....	Good.....	5 5.....	4.....	Tree doing and growing well. Sandy soil.
Haas.....	Medium.....	Reddish.....	Winter.....	Good.....	5 5.....	4.....	Not bearing, but doing well.
Lady.....	Medium.....	Reddish.....	Winter.....	Good.....	5 5.....	4.....	Doing well, but young.
Mann.....	Medium.....	Reddish.....	Winter.....	Good.....	5 5.....	4.....	Doing well, but young.
Mackintosh Red.....	Medium.....	Red.....	Fall.....	Good.....	5 5.....	4.....	Grown successfully and keep well. [sandy loam. Soil,
Peach Apple.....	Medium.....	Red.....	Fall.....	Good.....	5 5.....	4.....	Grown successfully and keep well. [sandy loam. Soil,
Red Canada.....	Medium.....	Red.....	Fall.....	Good.....	5 5.....	4.....	Doing well, but not bearing yet.
Red Russet.....	Medium.....	Red.....	Fall.....	Good.....	5 5.....	4.....	Doing well, but not bearing yet.
Tetofsky.....	Medium.....	Red.....	Autumn.....	Good.....	5 5.....	4.....	Poor keeper, but good for present use.
Walbridge.....	Medium.....	Red.....	Autumn.....	Good.....	5 5.....	4.....	Not bearing yet.
<i>Crab Apples.</i>							
Hyslop.....	Large.....	Reddish.....	Fall.....	Good.....	5 5.....	5 5.....	Crabs do well everywhere here.
Transcendent.....	Large.....	Reddish.....	Fall.....	Good.....	5 5.....	5 5.....	Crabs do well everywhere here.
Siberian.....	Small.....	Yellow.....	Fall.....	Good.....	5 5.....	5 5.....	Crabs do well everywhere here.
CARLETON AND OTTAWA CITY:							
Alexander.....	Very large.....	Red.....	September.....	Good.....	5 4.....	3 4.....	Very hardy.
Brockville Beauty.....	Large.....	Red.....	September.....	Very good.....	4 4.....	4 4.....	Very hardy.
Duchess of Oldenburgh.....	Large.....	Red cheek.....	September.....	Good.....	5 4.....	4 4.....	Very hardy.
Fameuse (Snow).....	Small.....	Red.....	Oct. to Dec.....	Best.....	3 3.....	5 5.....	Very hardy.
Grimes' Golden Pippin.....	Small.....	Russet.....	Winter.....	Best.....	4 4.....	5 4.....	Very hardy.
Red Astrachan.....	Medium.....	Red.....	Aug. and Sept.....	Very good.....	4 4.....	5 4.....	Very hardy.
Talman Sweet.....	Medium.....	Green.....	Oct. to May.....	Good.....	3 4.....	5 4.....	Very hardy.
Wealthy.....	Med. to large.....	Red and green.....	Sept. to Feb.....	Good.....	5 5.....	5 4.....	Being introduced, very hardy.
<i>Crab Apples.</i>							
Hyslop.....	Large.....	Red.....	Sept. to Nov.....	Good.....	5 4.....	1 3.....	Not yet fruited.
Montreal Beauty.....	Large.....	Red cheek.....	September.....	Good.....	5 4.....	3 3.....	Not yet fruited.
Transcendent.....	Medium.....	Red cheek.....	September.....	Good.....	5 5.....	4 5.....	Not yet fruited.
Whitney's No. 20.....	Very large.....	Red.....	September.....	Good.....	5 5.....	4 5.....	Not yet fruited.
LANARK—							
Alexander.....	Very large.....	Green and red.....	Sept. to Feb.....	Fair.....	5 4.....	3 4.....	Can be shipped to any part of the Province, sells well.
Fameuse (Snow).....	Small to medium.....	Red.....	Oct. to Dec.....	Very best.....	4 3.....	5 2.....	Inclined to spot.
Golden Sweet.....	Medium to large.....	Green.....	Sept. and Oct.....	Good.....	5 4.....	4 4.....	Very hardy, easily bruised and shows the bruises badly.
Peach of Montreal.....	Medium to large.....	Yellow.....	Sept. and Oct.....	Good.....	5 4.....	4 3.....	Spots like the Snow or Fameuse.
Mackintosh Red.....	Medium.....	Red.....	Sept. to Feb.....	Good.....	4 3.....	4 3.....	Being introduced.
Pewaukee.....	Medium.....	Red.....	1st September.....	Good.....	3 1.....	2 4.....	Very hardy, early ripening. Fruit drops badly from the tree.
Red Astrachan.....	Large.....	Green.....	Oct. to June.....	Good.....	4 4.....	4 4.....	Very hardy, early ripening. Fruit drops badly from the tree.
Talman Sweet.....	Medium.....	Yellow.....	Last of Aug.....	Good.....	5 4.....	3 3.....	Being introduced.
Tetofsky.....	Medium.....	Yellow.....	Last of Aug.....	Good.....	5 4.....	3 3.....	Being introduced.
Walbridge.....	Medium to large.....	Green and red.....	.....	Good.....	5 5.....	4 5.....	Grand acquisition. Should be largely planted at the north.
Wealthy.....	Medium to large.....	Green and red.....	.....	Good.....	5 5.....	4 5.....	Grand acquisition. Should be largely planted at the north.
<i>Crab Apples.</i>							
Hyslop.....	Large.....	Red.....	Sept. to Nov.....	Good.....	5 5.....	1 4.....	Should be largely planted at the north.
Montreal Beauty.....	Large.....	Yellow and red.....	Sept. to Nov.....	Good.....	5 5.....	3 5.....	Should be largely planted at the north.
Transcendent.....	Large.....	Yellow and red.....	Sept. to Nov.....	Good.....	5 5.....	3 5.....	Should be largely planted at the north.



## COUNTY REPORTS ON VARIETIES OF GRAPES GROWN IN ONTARIO.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE OF BUNCH.	SIZE OF BERRY.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.			REMARKS, SOIL, CULTIVATION, ETC.
						Hardiness.	Productiveness.	Wine. Market.	
NORFOLK—									
Adirondac.....	Large.....	Large.....	Black.....	Early.....	Best.....	5	5	5	
Agawam (Rog. 15).....	L'ge and small.....	Large.....	Red.....	Late.....	Best.....	5	5	4	
Barry (Rog. 43).....	Small.....	Medium.....	Black.....	September.....	Medium.....	4	4	5	
Clinton.....	Medium.....	Medium.....	Red.....	October.....	Good.....	5	5	3	
Concord.....	Large.....	Large.....	Black.....	September.....	Best.....	5	5	3	Sandy and clay loam.
Cornucopias (Arnold's 2).....	Large.....	Large.....	.....	.....	.....	.....	.....	.....	"
Crevelling.....	Large.....	Large.....	.....	.....	.....	.....	.....	.....	
Croton.....	Large.....	Large.....	.....	.....	.....	.....	.....	.....	
Delaware.....	Small.....	Small.....	Red.....	September.....	Best.....	4	5	5	Sandy and clay loam.
Eumelan.....	Medium.....	Medium.....	Black.....	September.....	Medium.....	4	4	4	"
Isabella.....	Medium.....	Medium.....	Black.....	October.....	Poor.....	1	4	3	"
Salem (Rog. 22).....	Large.....	Medium.....	Red.....	September.....	Good.....	4	4	4	Sandy loam and clay loam.
Talman (Champion).....	Large.....	Medium.....	Black.....	Early.....	Medium.....	5	5	3	"
Wilder (Rog. 4).....	L'ge and small.....	Medium.....	Black.....	September.....	Good.....	4	4	4	"
LINCOLN—									
Adirondac.....	Medium.....	Medium.....	Blue.....	September.....	Good.....	1	3	1	
Agawam (Rog. 15).....	Large.....	Large.....	Red.....	September.....	Good.....	3	3	2	
Allen's Hybrid.....	Med. to large.....	Medium.....	White.....	September.....	Good.....	2	3	1	Liab. to mildew.
Autuchon.....	.....	.....	.....	.....	.....	.....	.....	.....	
Barry (Rog. 43).....	Medium.....	Large.....	Black.....	September.....	Good.....	3	3	1	
Burnet.....	Med. to large.....	Medium.....	Blackish.....	September.....	.....	2	1	4	
Brighton.....	Large.....	Medium.....	Reddish.....	September.....	Best.....	3	4	3	
Catawba.....	Med. to large.....	Medium.....	Reddish.....	October.....	Good.....	3	4	5	
Clinton.....	Small.....	Small.....	Blue.....	September.....	Poor.....	5	4	4	Too late.
Concord.....	Medium.....	Medium.....	Blue.....	September.....	Good.....	5	5	2	
Crevelling.....	Scragly.....	Medium.....	Blue to black.....	Aug. to Sept.....	Good.....	3	3	1	
Delaware.....	Small.....	Small.....	Reddish.....	September.....	Best.....	4	4	4	
Diana.....	Medium.....	Medium.....	Reddish.....	October.....	Good.....	3	4	2	
Duchess.....	Med. to large.....	Medium.....	White.....	September.....	Best.....	3	4	4	Rather late.
Early Dawn.....	Small.....	Small.....	Black.....	September.....	Poor.....	1	1	.....	

Eumelan	Fair	Smallish	Blue-black	September	Good	3	3	3	Too late; drops from bunch.
Hartford Prolific	Fair	Medium	Blue or black	Aug. to Sept.	Good	3	3	3	
Herbert (Rog. 44)	Large	Good size.	Black	September	Best	4	4	5	
Iona	Large	Medium	Red	Sept. to Oct.	Good	3	4	4	Rather late.
Isabella	Good size.	Medium	Blue	October	Good	4	4	4	
Isabella	Good size.	Medium	Blue or black	September	Best	3	4	4	
Jefferson	Large	Medium	Red	Sept. to Oct.	Good	3	3	4	Not very well tested.
Lady	Fair	Medium	White	September	Best	3	4	4	
Lady Washington	Large	Medium	Pinkish white	October	Good	3	3	3	Not well tested.
Lindley (Rog. 9)	Fair	Large	Red	September	Best	3	4	5	
Martha	Medium	Medium	White	September	Good	2	3	3	
Massasoit (Rog. 3)	Small	Medium	Reddish	Aug. to Sept.	Good	3	2	4	
Merrimac (Rog. 19)	Large	Large	Black	September	Best	4	4	5	
Moore's Early	Medium	Medium	Black	Aug. to Sept.	Good	4	5	5	
Niagara	Med. to large.	Medium	White	Sept. to Dec.	Best	5	3	5	
Pockington	Medium	Med. to large.	White	October	Good	4	3	4	Rather late.
Prentiss	Small to Med.	Medium	White	Sept. to Oct.	Good	4	4	4	
Rebecca	Small	Medium	White	September	Best	2	3	3	
Salem (Rog. 22)	Medium	Large	Red or purple	September	Good	4	3	4	Mildews on sandy loam.
Talman (Champion)	Fair	Medium	Black	August	Poor	5	4	3	Its earliness is all that sells it.
Union Village	Large	Large	Blue or black	September	Fair	1	3	3	Tender.
Vergennes	Med. to large.	Medium	Reddish	September	Good	4	3	4	A long keeper; not very well tested, but very promising.
Walter	Smallish	Medium	Red	September	Fair	2	3	3	
Wilder (Rog. 4)	Large	Large	Black	September	Best	4	4	5	Similar to Concord, but earlier.
Worden	Medium	Medium	Blue	Aug. to Sept.	Good	4	4	5	
Huron—									
Adirondac	Medium	Large	Black	Sept. (first)	Good	4	3	3	Not generally reliable.
Agawam (Rog. 15)	Medium	Large	Red	Sept. (first)	Good	5	4	3	
Allen's Hybrid	Medium	Medium	White	Sept. (first)	Very good	3	3	3	
Alvey	Medium	Small	Black	Sept. (end)	Good	3	3	3	
Autcheon	Large	Medium	White	Sept. (end)	Good	5	3	3	
Barry (Rog. 43)	Large	Large	Black	Sept. (middle)	Good	3	3	3	
Brant	Medium	Small	Black	Oct. (end)	Hardly good	5	4	3	
Burnet	Large	Large	Black	September	Very good	5	1	5	Does not set fruit well; not likely to be valuable for cropping in this county; perfect specimens would stand high in market.
Brighton	Medium	Large	Red or dark purple	Sept. (first)	Very good	5	4	3	
Canada (Arnold's 16)	Medium	Medium	Black	September	Good	4	3	2	
Catawba	Medium	Large	Red	October	Very good to best.	4	4	4	Requires good clay loam.
Clinton	Medium	Small	Black	October	Good	5	5	4	
Concord	Large	Large	Black	September	Good	5	5	2	
Cornucopia (Arnold's 2)	Large	Medium	Black	Sept. (end)	Good	4	4	3	
Creveling	Medium	Medium	Black	Sept. (middle)	Very good	4	3	2	
Croton	Medium	Small	Light yellow	Sept. (middle)	Very good	4	3	2	Unreliable for growth and bearing.
Delaware	Small	Small	Red	Sept. & Oct. 1st	Best	4	4	4	Needs excellent cultivation and rich soil, and fruit should be thinned out to ensure perfect fruit.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE OF BUNCH.	SIZE OF BERRY.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.			REMARKS. SOIL, CULTIVATION, ETC.
						Hardiness.	Productiveness.	Wine.	
HURON—Continued.									
Diana.....	Medium.....	Medium.....	Red.....	Sept. and Oct.	Very good.....	4	3	3	2
Duchess.....	Medium.....	Medium.....	White or green and yellow.....	Sept. (end).....	Very good.....	4	4	...	3
Early Dawn.....	Medium.....	Medium.....	Black.....	Sept. (middle).....	Good.....	4	4	2	3
Essex (Rog. 41).....	Medium.....	Large.....	Black.....	Sept. (end).....	Good.....	5	3	...	3
Eumelan.....	Medium.....	Medium.....	Black.....	September.....	Good.....	4	3	...	3
Goethe (Rog. 1).....	Large.....	Very large.....	Yellow and green.....	Oct. (end).....	Very good.....	3	2	3	1
Hartford Prolific.....	Large.....	Large.....	Black.....	Sept. (first).....	Good.....	5	4	...	3
Herbert (Rog. 44).....	Medium.....	Large.....	Black.....	Sept. to 1st Oct.	Very good.....	4	3	...	3
Iona.....	Medium.....	Medium.....	Red.....	Oct. 1st.....	Very good.....	4	4	4	3
Isabella.....	Medium.....	Large.....	Black.....	Oct. 1st.....	Good.....	5	5	3	3
Israela.....	Medium.....	Large.....	Black.....	Sept. (end).....	Good.....	5	4	2	3
Ives.....	Medium.....	Medium.....	Black.....	October.....	Good.....	4	3	4	2
Jefferson.....	Large.....	Medium.....	Light reddish.....	Sept. (end).....	Good.....	4	3	...	3
Lady.....	Medium.....	Large.....	White.....	September.....	Good.....	5	2	...	2
Lady Washington.....	Large.....	Medium.....	White.....	Sept. (end).....	Good.....	3	3	3	2
Lindley (Rog. 9).....	Medium.....	Medium.....	Red.....	September.....	Good.....	5	4	...	4
Martha.....	Small.....	Large.....	Green.....	September.....	Good.....	3	3	3	1
Massasoit (Rog. 3).....	Medium.....	Large.....	Red.....	September.....	Good.....	4	3	3	3
Merrimac (Rog. 19).....	Medium.....	Large.....	Black.....	Sept. (end).....	Good.....	4	4	4	4
Moore's Early.....	Medium.....	Large.....	Black.....	Sept. (first).....	Good.....	4	4	...	2
Niagara.....	Large.....	Large.....	White.....	September.....	Good.....	5	5	4	5
Othello (Arnold's 1).....	Large.....	Large.....	Black.....	October.....	Good.....	5	3	2	1
Pocklington.....	Large.....	Large.....	White.....	Oct. (end).....	Hardly good.....	3	3	...	3
Prentiss.....	Medium.....	Medium.....	White.....	September.....	Very good.....	4	5	...	4
Rebecca.....	Medium.....	Medium.....	Green.....	Oct. (first).....	Good.....	4	3	...	2
Salem (Rog. 22).....	Large.....	Large.....	Red.....	Oct. (first).....	Very good.....	4	4	4	4
Senasqua.....	Large.....	Large.....	Black.....	Sept. (end).....	Very good.....	5	4	...	4
Talman (Champion).....	Medium.....	Large.....	Black.....	Sept. (first).....	Poor.....	5	5	3	1

Only good when first ripe, loses flavour in a few days; berry also drops badly from bunch.  
This is undoubtedly the grape for general market value.

Shells badly; very poor grower.  
Requires to have fruit thinned out.

Scarcely saleable in local markets on account of poor quality.





VARIETIES— CLASSIFIED BY COUNTIES.	SIZE OF BUNCH.	SIZE OF BERRY.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.				REMARKS. SOIL, CULTIVATION, ETC.
						Hardiness.	Productiveness.	Wine.	Market.	
*BRANT—										
Agawam (Rog. 15)	Medium.	Medium.	Red.	September.	Good.	3	4	4	3	
Aminia (Rog. 39)	Medium.	Large.	Light black	30th Sept.	Good.	4	3	....	4	
Autuchon	Not good.	Medium.	White.	30th Sept.	Good.	3	1	....	2	
Barry (Rog. 43)	Medium.	Medium.	Black.	September.	Good.	3	3	3	5	
Brant	Good.	Small.	Black.	August.	Good.	3	5	5		
Brighton	Medium.	Medium.	White (?)	October.	Good.	5	4	1	5	(This cannot be correct, editor.)
Canada (Arnold's 16)	Good.	Small.	Black.	October.	Good.	5	5	5		"
Catawba	Large.	Large.	Black (?)	October.	Good.	5	5	3		"
Clinton	Small.	Small.	Red (?)	October.	Good.	5	5	5		"
Concord	Medium.	Small.	Black.	October.	Good.	5	5	5		
Cornucopia (Arnold's 2)	Very large.	Small.	Black.	September.	Medium.	5	5	3		Skin bursts and bees feed on it.
Delaware.	Small.	Small.	White(?)	1st October.	Good.	5	5	4		
Essex (Rog. 41)	Medium.	Medium.	Red.	Middle Oct.	Good.	4	3	5		Market value so high on account of coming in ahead of others.
Hartford Prolific.	Large.	Medium.	Black.	August.	Poor.	5	4	4		
Herbert (Rog. 44)	Medium.	Large.	Black.	September.	Good.	4	4	....	4	
Lady	Medium.	Small.	Green.	End August.	Good.	5	4	....	5	
Massasoit (Rog. 3)	Medium.	Medium.	Light red.	Aug. and Sept.	Good.	5	4	....	5	
Merrimac (Rog. 19)	Medium.	Large.	Black.	October.	Good.	4	3	....	4	
Moore's Early	Medium.	Medium.	Black.	August.	Best.	3	4	5		
Niagara	Large.	Large.	Black (?)	October.	Poor.	5	5	....	5	(This cannot be correct, Editor.)
Othello (Arnold's 1)	Very large.	Very large.	Black.	Middle Oct.	Good.	3	5	4		Wants frost to ripen and flavour it.
Pocklington	Medium.	Medium.	White.	End Sept.	Best.	5	4	5		
Salem (Rog. 22)	Medium.	Medium.	Red.	September.	Best.	5	5	5		
Wildor (Rog. 4)	Very large.	Very large.	Black.	October.	Very good.	4	5	....	5	
Seedling.	Large.	Large.	Black.	September.	Best.	5	5	4		Grown at H. W. Brethour's, Brantford.
GREY—										
Adirondac.	Medium.	Large.	Black.	September.	Good.	3	3	3		
Agawam (Rog. 15)	Medium.	Large.	Red.	September.	Good.	4	4	....	3	
Allen's Hybrid	Medium.	Medium.	White.	September.	Very good.	1	2	....	3	Too tender generally.
Barry (Rog. 43)	Large.	Large.	Black.	September.	Good.	4	3	1		
Brant	Medium.	Small.	Black.	October.	Hardly good.	5	4	4		

(This cannot be correct, editor.)

" "

Skin bursts and bees feed on it.

Market value so high on account of coming in ahead of others.

(This cannot be correct, Editor.)  
Wants frost to ripen and flavour it.

Grown at H. W. Brethour's, Brantford.

Too tender generally.

Burnet.	Large	Black	September	Very good	4	.....	Has not succeeded in fruiting; sets badly.
Brighton	Medium	Red or dark purple.	September	Very good	5	3	4
Clinton	Medium	Black	October	Good	5	5	4
Concord	Large	Black	September	Good	5	5	1
Creveling	Medium	Black	September	Very good	4	3	4
Delaware	Small	Red	Sept. and Oct.	Best.	4	4	3
Diana	Medium	Red	Sept. and Oct.	Very good	4	3	4
Duchess	Medium	White or green and yellow	September	Very good	4	4	2
Emmanuel	Medium	Black	September	Good	4	3	2
Hartford Prolific	Large	Black	September	Good	4	3	3
Herbert (Rog. 44)	Medium	Black	September	Very good	4	3	3
Iona	Medium	Red	October	Very good	4	3	3
Isabella	Medium	Black	October	Good	3	4	3
Isabella	Medium	Black	October	Good	4	4	3
Lindley (Rog. 9)	Medium	Red	September	Good	4	4	3
Martha	Small	Green	September	Good	4	2	5
Massasoit (Rog. 3)	Medium	Red	September	Good	4	4	2
Merrimac (Rog. 19)	Medium	Black	September	Good	4	3	3
Moore's Early	Large	Black	September	Good	5	4	3
Salem (Rog. 22)	Large	Red	October	Very good	5	4	4
Talman (Champion)	Medium	Black	September	Poor	5	5	1
Wilden (Rog. 4)	Large	Black	September	Very good	4	4	5
Worden	Medium	Black	September	Good	5	4	5
SMCOE—							
Adirondac	Large	Purple black	Late in Sept.	Very good.	4	4	5
Agawam (Rog. 15)	Large	Dark red	September	Very good.	5	5	5
Brant	Large compact	Black	September	Poor	4	4	4
Burnet	Medium	Black	October	Very good.	5	5	5
Brighton	Large	Purple black	October	Good	4	4	5
Clinton	Small	Black	October	Good	5	2	4
Concord	Large	Black	September	Good	5	5	5
Creveling	Medium	Black	September	Good	5	5	5
Delaware	Medium	Red	September	Very good.	5	5	5
Isabella	Large	Purple black.	October	Good	4	5	5
Lindley (Rog. 9)	Medium	Red	October	Very good.	5	5	5
Martha	Medium		October				
Massasoit (Rog. 3)	Small	Red	September	Good	3	3	4
Merrimac (Rog. 19)	Large	Black	Late in Oct.	Poor.	2	3	3
Moore's Early	Large	White	October	Good	4	4	5
Pockington	Large	White.	October	Best.	4	5	5
Prentiss	Medium						

\* NOTE.—Soil, sandy loam. Most successful grape growers top dress heavily with cow manure every year; dust the leaves when just out of the bud and again in July with land plaster; the best grapes are grown on trellises running north and south.



## COUNTY REPORTS ON VARIETIES OF GRAPES GROWN IN ONTARIO.—Continued.

VARIETIES — CLASSIFIED BY COUNTIES.	SIZE OF BUNCH.	SIZE OF BERRY.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.				REMARKS, SOIL, CULTIVATION, ETC.		
						Hardiness.	Productiveness.	Wine.	Market.			
SIMCOE—Continued.												
Salem (Reg. 22)	Medium	Large	Red	October	Very good	5	5	5	5	Hardy and healthy vine. Growth not as good as No. 9 and 15. Not yet fruited.		
Talman (Champion)	Large	Large	Black	September	Poor	5	5	5	5			
Wilder (Reg. 4)	Large	Large	Black	October	Good	5	5	5	5			
Worden												
CARDWELL —												
Isabella	Medium	Medium	Purple	October	Good	5	5					
YORK —												
Agawam (Reg. 15)	Medium	Large	Red	September	Very good	3	3	5	5	Sandy loam, clean cultivation ; sells well.  This is a fine grape		
Barry (Reg. 43)	Small	Medium	Black	September	Good	4	3	3	3			
Burnet	Small	Large	Black	September	Poor	5	1	3	2			
Brighton	Large	Medium	Red	September	Best	4	3	5	5			
Clinton	Medium	Medium	Black	September	Good	5	5	5	3			
Concord	Large	Large	Black	September	Good	5	5	3	5			
Delaware	Small	Medium	Red	September	Best	5	3	5	4			
Hartford Prolific	Large	Large	Black	September	Good	5	3	5	4			
Lindley (Reg. 9)	Medium	Medium	Red	September	Very good	4	4	5	5			
Moore's Early	Large	Very large	Black	August	Good	5	4	4	4			
Salem (Reg. 22)	Large	Large	Red	September	Good	3	4	5	5			
Talman (Champion)	Medium	Large	Black	August	Poor	5	3	3	3			
Wilder (Reg. 4)	Large	Large	Black	September	Good	5	4	4	4			
Worden	Large	Large	Black	September	Very good	4	5	4	4			
SOUTH ONTARIO —												
Agawam (Reg. 15)	Large	Very large	Red	September	Very good	4	3	3	5			
Barry (Reg. 43)	Medium	Large	Black	September	Very good	4	3	3	4			
Burnet	Large	Large	Black	September	Good	4	3	2	4			
Brighton	Large	Medium	Red	September	Best	4	4	4	5		This is a fine grape	

Clinton	Small	Black	September	Poor	5	5	2	Tender for this part of Canada ; foliage sun scalds.
Concord	Large	Black	September	Very good	5	5	4	
Croton	Large	White	September	Best.	2	2	5	
Delaware	Small	Red	September	Best.	4	5	4	Most prolific cropper with me. Nice fruit, but too small.
Duchess	Large	White	September	Very good	4	5	3	
Early Dawn	Small	Black	August	Good	4	3	2	
Eumelan	Large	Black	August	Good	4	4	4	
Hartford Prolific	Large	Black	August	Very good	4	4	4	
Isabella	Large	Black	October	Good	4	4	3	
Janessville	Medium	Black	August	Very good	5	5	3	This is a fine grape to my taste.
Lady	Medium	White	September	Very good	4	3	2	
Lady Washington	Medium	White	September	Best.	4	3	5	
Lindley (Rog. 9)	Medium	Red	September	Very good	4	4	3	Sandy loam ; clean cultivation.
Martha	Medium	White	September	Very good	4	3	2	
Merrimac (Rog. 19)	Large	Black	September	Very good	4	3	3	
Moore's Early	Medium	Black	Last of Aug.	Good	4	2	3	Not as early as I expected ; a poor cropper.
Pocklington	Very large	White	October	Very good	4	4	3	
Pretiss	Medium	White	September	Very good	4	3	4	
Salem (Rog. 22)	Large	Red	September	Best.	4	3	4	Too late for this part of Canada.
Talman (Champion)	Medium	Black	August	Good	4	3	4	
Telegraph (Christine)	Large	Black	September	Good	5	4	4	
Vergennes	Medium	Red	September	Very good	4	4	2	Growing in favour every year.
Wilden (Rog. 4)	Large	Black	September	Very good	5	4	3	
Worden	Large	Black	September	Good	4	3	4	
					4	4	4	
Clinton	Small	Black	September	Fair	1	1	1	About the best grape grown here. Drops its fruit. Does not ripen.
Concord	Large	Black	September	Good	1	1	1	
Delaware	Small	Purple	Early	Very good	1	1	1	
Hartford Prolific	Large	Blue-black	Early	Fair	1	1	1	Drops its fruit some.
Isabella	Loose	White	Late	Medium	1	1	1	
Martha	Large	White	Early	Very good	1	1	1	
Moore's Early	Large	Black	Early	Very good	1	1	1	Does pretty well here.
Pocklington	Medium	Yellow to white	Late	Very good	1	1	1	
Salem (Rog. 22)	Large	Purple	Early	Very good	1	1	1	
Talman (Champion)	Medium	Black	Very early	Poor	1	1	1	
Adirondac	Medium	Purple	September	Poor	5	4	3	Stiff clay, well manured, clean cul- tivation on a southern slope.
Agawan (Rog. 15)	Large	Red	September	Best.	5	5	5	
Burnet	Small	Black	October	Best.	5	1	5	
Delaware	Small	Red	September	Best.	5	5	5	
Eumelan	Medium	Purple	September	Good	5	4	3	
Hartford Prolific	Medium	Black	September	Poor	5	4	3	

## COUNTY REPORTS ON VARIETIES OF GRAPES GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE OF BUNCH.	SIZE OF BERRY.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.				REMARKS. SOIL, CULTIVATION, ETC.
						Hardiness.	Productiveness.	Wine.	Market.	
FRONTENAC—Continued.										
Isabella .....	Large .....	Large .....	Black .....	October .....	Poor .....	5	5	3	1	
Lindley (Rog. 9) .....	Very large .....	Large .....	Red .....	September .....	Best .....	5	5	4	5	
Massasoit (Rog. 3) .....	Large .....	Large .....	Red .....	September .....	Very good .....	5	4	...	5	
Rebecca .....	Medium .....	Large .....	White .....	September .....	Poor .....	5	1	1	1	
Rogers' No. 20 .....	Large .....	Large .....	Red .....	September .....	Best .....	5	4	4	5	
Salem (Rog. 22) .....	Large .....	Large .....	Red .....	September .....	Best .....	5	4	2	5	
Talman (Champion) .....	Medium .....	Medium .....	Black .....	September .....	Poor .....	5	5	2	1	
Wilder (Rog. 4) .....	Large .....	Large .....	Black .....	September .....	Good .....	5	4	4	5	
LEEDS—										
Burnet .....	Medium .....	Medium .....	Black .....	September .....	Best .....	5	4	3	5	The Concord is the most successful and hardy, and also most productive grape we grow.
Concord .....	Large .....	Large .....	Black .....	September .....	Good .....	5	5	3	5	
Delaware .....	Medium .....	Medium .....	Red .....	September .....	Good .....	4	5	5	5	
Diana .....	Large .....	Medium .....	Reddish .....	September .....	Good .....	5	5	5	4	
Moore's Early .....	Medium .....	Large .....	Reddish .....	September .....	Best .....	5	5	4	5	
Pocklington .....	Large .....	Large .....	Green .....	September .....	Good .....	5	5	4	5	
Prentiss .....	Small .....	Small .....	Red .....	September .....	Good .....	5	5	3	5	
Worden .....	Medium .....	Medium .....	Black .....	September .....	Good .....	5	4	4	5	
DUNDAS AND STORMONT:										
Burnet .....	Medium .....	Medium .....	Black .....	September 15 .....	Poor .....	5	5	4	...	Hardy, good grower, one of the hardest.
Clinton .....	Small .....	Small .....	Black .....	September 15 .....	Good .....	...	...	...	...	
Concord .....	Large .....	Large .....	Black .....	September 25 .....	Good .....	...	...	...	...	
Creveling .....	Large .....	Large .....	Red .....	September 1 .....	Very good .....	...	...	...	...	One of the most profitable, hardy. Drops from the bunches.
Delaware .....	Small .....	Small .....	Red .....	September 1 .....	Good .....	...	...	...	...	
Hartford Prolific .....	Medium .....	Medium .....	Black .....	September 15 .....	Very good .....	4	5	...	...	Grows good, but has not fruited yet. Grows good, but mildews badly.
Massasoit (Rog. 3) .....	Large .....	Large .....	Red .....	September 10 .....	Good .....	4	4	...	...	
Moore's Early .....	Medium .....	Medium .....	Black .....	September .....	Good .....	...	...	...	...	
Salem (Rog. 22) .....	Large .....	Large .....	Flesh .....	September .....	Good .....	...	...	...	...	



## RUSSELL—

Adirondac.	Medium.	Large.	Black.	September.	Good.	3	4	3	
Agawam (Rog. 15).	Large.	Large.	Red.	Last Sept.	Good.	4	2	1	
Atutcheon.	Medium.	Medium.	G. W.	September 25.	Good.	3	3		Berries not uniform in size. One of the best.
Burnet.	Large.	Large.	Black.	September 25.	Very good.	3	4	3	
Brighton.	Large.	Large.	Red.	September 25.	Very good.	5	4	1	
Canada (Arnold's 16).	Medium.	Medium.	Black.	September 25.	Good.	5	3		Not a desirable grape.
Clinton.	Small.	Small.	Black.	September.	Poor.	5	2		
Concord.	Large.	Large.	Black.	September 25.	Good.	5	5		Sets thin on the bunch.
Crevelling.	Large.	Medium.	Black.	September 20.	Good.	5	4		
Delaware.	Small.	Small.	Red.	September 20.	Very good.	4	3	4	
Eumelan.	Medium.	Medium.	Black.	September 20.	Very good.	5	3	3	Drops from the bunch. Too late for this section. One of Rogers' best.
Hartford Prolific.	Large.	Large.	Black.	September 16.	Good.	5	5		
Iona.	Large.	Medium.	Red.	October.		5			
Lindley (Rog. 9).	Large.	Large.	Red.	September 25.	Good.	5	4	4	
Massasoit (Rog. 3).	Medium.	Large.	Red.	September 20.	Good.	5	3	2	
Moore's Early.	Medium.	Medium.	Red.	September 20.	Good.	5	4	4	
Othello (Arnold's 1).	Very large.	Medium.	Black.	September 20.	Good.	5	4		Too late for this section. Mildews badly. Good for market, being very early.
Salem (Rog. 22).	Large.	Large.	Red.	September 20.	Good.	5	5		
Talman (Champion).	Large.	Large.	Black.	September 10.	Poor.	5	5	5	

CARLETON AND OTTAWA  
CITY—

Adirondac.	Medium.	Large.	Black.	September.	Good.	3	4	3	
Agawam (Rog. 15).	Large.	Large.	Red.	Last Sept.	Good.	4	2	1	
Aminia (Rog. 39).	Medium.	Medium.	G. W.	September 25.	Good.	3	3		Berries not uniform in size. One of the best.
Burnet.	Large.	Large.	Black.	September 25.	Very good.	3	4	3	
Brighton.	Large.	Large.	Red.	September 25.	Very good.	5	4	1	
Canada (Arnold's 16).	Medium.	Medium.	Black.	September 25.	Good.	5	3		Not a desirable grape.
Clinton.	Small.	Small.	Black.	September.	Poor.	5	2		
Concord.	Large.	Large.	Black.	September 25.	Good.	5	5		Sets thin on the bunch.
Crevelling.	Large.	Medium.	Black.	September 20.	Good.	5	4	4	
Delaware.	Small.	Small.	Red.	September 20.	Very good.	4	3	3	Drops from the bunch. Too late for this section. One of Rog. best.
Eumelan.	Medium.	Medium.	Black.	September 20.	Very good.	5	3	3	
Hartford Prolific.	Large.	Large.	Black.	September 16.	Good.	5	5		
Iona.	Large.	Medium.	Red.	October.		5			
Lindley (Rog. 9).	Large.	Large.	Red.	September 25.	Good.	5	4	4	
Massasoit (Rog. 3).	Medium.	Large.	Red.	September 20.	Good.	5	3	2	
Moore's Early.	Medium.	Medium.	Black.	September 20.	Good.	5	4	4	
Salem (Rog. 22).	Large.	Large.	Red.	September 20.	Good.	5	5		Mildews badly. Good for market, being very early.
Talman (Champion).	Large.	Large.	Black.	September 10.	Poor.	5	5	5	

## LANARK—

Adirondac.	Large.	Large.	Black.	September.	Very good.	3	4	3	4
Agawam (Rog. 15).	Large.	Large.	Black.	September.	Very good.	4	3	3	5
Brighton.	Large.	Large.	Red.	Last Sept.	Very good.	5	4	4	5
Concord.	Large.	Large.	Black.	Last Sept.	Very good.	5	5		5



## COUNTY REPORTS ON VARIETIES OF PEARS GROWN IN ONTARIO.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS, SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
NORFOLK—											
Bartlett.....	Large.....	.....	September.....	Best.....	5	5	5	5	5	5	Sandy loam and clay loam.
Beurre Clairgeau.....	Large.....	.....	November.....	Best.....	5	5	5	5	5	5	
Beurre d'Anjou.....	Large.....	.....	November.....	Best.....	5	5	5	5	5	5	
Beurre Diel.....	Very large.....	.....	October.....	Very good.....	5	5	5	5	5	5	
Clapp's Favourite.....	Large.....	.....	September.....	Best.....	5	5	5	5	5	5	
Duchesse d'Angoulême.....	Very large.....	.....	October.....	Best.....	5	5	5	5	5	5	
Flemish Beauty.....	Large.....	.....	October.....	Very good.....	5	5	5	5	5	5	
Louise Bonne.....	Large.....	.....	October.....	Best.....	5	4	4	4	5	3	
Osband's Summer.....	Medium.....	.....	August.....	Best.....	4	4	5	3	5	5	
Seckel.....	Small.....	.....	October.....	Best.....	5	5	5	5	5	5	
Souvenir du Congrès.....	Very large.....	Yellow.....	September.....	Best.....	5	5	5	5	5	5	
LINCOLN—											
Ananas D'Ete.....	Medium to large.....	Yellow, sometimes blushed.....	Sept. to Oct.....	Fair.....	4	4	3	4	3	1	Sandy loam and clay loam; larger on sandy soil, earlier on clay.
Bartlett.....	Medium to large.....	Yellow.....	September.....	Best.....	5	5	5	3	5	1	
Belle Lucrative.....	Medium.....	Greenish yellow.....	September.....	Best.....	4	4	5	3	5	1	Clay loam.
Beurre Bosc.....	Medium to large.....	Russet.....	October.....	Good.....	3	4	4	4	2	2	
Beurre Clairgeau.....	Large.....	Brownish russet.....	October.....	Fair.....	4	5	2	4	3	3	
Beurre d'Anjou.....	Medium to large.....	Green with bluish.....	Nov. to Dec.....	Good.....	4	4	4	4	5	5	
Beurre Diel.....	Large.....	Greenish yellow.....	November.....	Good.....	3	4	3	4	2	2	
Beurre Giffard.....	Medium.....	Yellow with red cheek.....	August.....	Good.....	4	4	5	2	5	...	
Beurre Grise d'Hiver Nouveau.....	Medium.....	Golden russet, red cheek dot d.....	Nov. to Feb.....	Good.....	2	4	3	3	4	...	
Beurre Hardy.....	Medium to large.....	Greenish russet.....	Sept. and Oct.....	Good.....	4	4	4	3	4	1	
Bloodgood.....	Medium.....	Yellow and russet.....	July and Aug.....	Good.....	3	3	5	2	2	1	
Butfum.....	Medium.....	Yellow to Brown.....	October.....	Fair.....	4	4	2	3	2	1	
Clapp's Favourite.....	Large.....	Reddish yellow.....	August.....	Good.....	5	5	3	3	4	...	
Dearborn's Seedling.....	Small.....	Light yellow.....	August.....	Good.....	4	5	4	2	4	...	
Doctor Reeder.....	Medium.....	Russet yellow.....	October.....	Fair.....	4	4	3	3	3	1	
Doyenne Boussock.....	Large.....	Yellow netted with russet.....	Sept. and Oct.....	Good.....	5	5	4	4	4	1	



## COUNTY REPORTS ON VARIETIES OF PEARS GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.		
LINCOLN—Continued.												
Doyenne D'Ete.	Small	Yellow, red cheek.	July and Aug.	Good.	4	5	4	2	4	4	1	Sand; grows knotty some seasons, as 1884. Cracked and spotted so of late that it is worthless in some localities; blights badly on sand or clay.
Doyenne Gray.	Medium.	Russet.	October.	Best.	3	4	5	2	5	4	1	
Duchesse d'Angouleme.	Large	Green, red cheek.	Oct. to Dec.	Good.	5	4	3	5	5	5	1	
Flemish Beauty.	Medium to large.	Yellow with red cheek.	September.	Best.	5	3	5	4	5	5	1	
Glout Monceau.	Large	Greenish yellow.	December.	Good.	1	4	3	4	3	2	Blights badly.	
Goodale.	Medium.	Light yellow.	October.	Good.	5	4	4	4	4	1		
Howell.	Large	Green, clear.	September.	Poor.	5	4	1	1	2	3		
Josephine de Malines.	Medium to large	Greenish yellow.	Dec. to Feb.	Best.	4	4	4	4	3	4		
Kingsessing.	Large	Yellow.	September.	Very poor.	5	1	1	1	1	1	Sand.	
Lawrence.	Medium.	Greenish yellow.	Nov. to Feb.	Good.	5	4	4	4	4	4	One of best winter.	
Louise Bonne.	Medium.	Red.	Nov. to Feb.	Good.	5	4	3	3	3	2	Sand.	
Mount Vernon.	Medium.	Brownish russet.	December.	Medium.	4	4	3	3	3	3	Sand.	
Osband's Summer.	Medium.	Yellow.	August.	Very good.	5	5	5	5	5	5	Sand.	
Rostie zer.	Small	Red.	August.	Best.	5	5	5	5	5	5		
Seckel.	Small	Yellowish brown.	October.	Best.	5	5	5	5	5	5		
Sheldon.	Medium to large	Russet.	Sept. and Oct.	Best.	4	5	5	3	5	5		
Souvenir du Congrès.	Very large.	Yellow with bluish.	September.	Poor.	2	4	1	4	3	1	Rather tender.	
Stevens' Genesee.	Medium to large	Whitish dotted.	September.	Fair.	3	4	2	4	4	4		
Tyson.	Medium.	Yellow, slight russet.	Aug. and Sept.	Best.	5	5	5	5	3	5	Clay.	
Vicar of Winkfield.	Large?	Green.	October.	Good.	5	3	2	3	3	3	Sand.	
White Doyenne.	Medium.	Yellow spots.	October.	Good.	5	3	2	4	4	4		
HURON—												
Ananas D'Ete.	Large.	Yellow and brown.	September.	Good.	4	3	3	3	3	3	Blights sometimes on light cultivated soil	
Bartlett.	Large.	Yellow.	Aug. and Sept.	Very good.	5	5	4	5	5	5	best early pear for market.	
Belle Lucrative (Fondante D'Automne).	Medium.	Green.	September.	Very good.	4	3	4	4	3	5	An excellent pear.	
	Large?	Yellow and cinnamon russet.	Sept. and Oct.	Best.	5	3	4	4	4	5		



# COUNTY REPORTS OF VARIETIES OF PEARS GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.		
HURON—Continued.												
Seckel .....	Small .....	{ Brown, yellow and dull red } cheek .....	Sept. and Oct.	Best.....	5	4	5	2	2	..	{ Too small for Canadian market ; pays bet- ter to ship to New York.	
Sheldon .....	Large .....		Green and yellow and light russet .....	Sept. and Oct.	Very good..	5	4	4	5	5		..
Souvenir du Congress.....	Very large .....		Yellow .....	August.....	Good.....	1	1	2	3	4		..
Stevens' Genesee .....	Large .....	Yellow .....	September.....	Good.....	4	3	2	3	3	..	Deservedly popular. Too tender, and not valuable in its season in any case.	
Tyson .....	Small .....	Yellow and red cheek .....	Aug. and Sept.	Very good..	4	3	4	3	2	..		
Urbaniste .....	Medium .....	Pale yellow .....	October .....	Very good..	5	3	3	3	3	..	Subject to blight on light soil. Too small, and rots in heart when ripe.	
Vicar of Winkfield .....	Large .....	Pale yellow .....	Dec. and Jan.	Hardly good	5	3	3	3	3	..		
Washington .....	Medium .....	Light yellow .....	Sept. and Oct.	Very good..	4	3	4	4	3	..	Losing in favour for market. Trees appear healthy, but poor growers.	
White Doyenne .....	Large .....	Light green .....	August.....	Poor.....	4	4	3	4	..	..		
Windsor .....	Medium .....	Green and grey russet .....	Dec. and Jan.	Very good..	5	4	4	4	2	..	Too small for market.	
BRUCE—												
Bartlett .....	Large .....	Yellow .....	Aug. and Sept.	Very good..	4	4	4	5	5	..		
Belle Lucrative .....	Medium .....	Green .....	September .....	Very good..	4	3	4	4	3	..		
Beurre Bosc .....	Large .....	Yellow and cinnamon russet.	Sept. and Oct.	Best.....	4	3	4	4	4	..		
Beurre Clairgeau .....	Large .....	Light green and red .....	Nov. and Dec.	Good.....	5	4	2	4	5	..		
Beurre d'Anjou .....	Large .....	Green .....	Oct. and Nov.	Very good..	4	3	4	4	4	..		
Beurre Diel .....	Large .....	Green and yellow .....	Oct. to Dec.	Very good..	4	3	4	4	4	..		
Beurre Giffard .....	Medium .....	Green, yellow, red .....	Aug. and Sept.	Very good..	4	3	4	3	3	..		
Beurre Hardy .....	Large .....	Green and light russet .....	Sept. and Oct.	Very good..	3	3	4	4	5	..		
Beurre Superfine .....	Medium .....	Yellow .....	Oct. and Nov.	Very good..	3	3	4	4	4	..		
Buffum .....	Medium .....	Yellow and red .....	September .....	Good.....	5	5	1	4	2	..		
Clapp's Favourite .....	Large .....	Yellow and red .....	Aug. and Sept.	Very good..	5	5	1	4	5	..		
Doyenne D'Ete .....	Small .....	Yellow and red .....	August.....	Good.....	3	3	4	4	2	..		
Doyenne Gray .....	Medium .....	Cinnamon russet .....	October .....	Very good..	4	4	4	4	3	..		
Duchesse d'Angouleme .....	Large .....	Green and yellow .....	Oct. and Nov.	Very good..	4	4	4	4	5	..		
Flemish Beauty .....	Large .....	Light yellow, red .....	September .....	Very good..	5	5	4	4	5	..		



MIDDLESEX —		Light yellow	October	Very good.	4	4	3	4	5
Goodale	Medium	Light yellow	September	Very good.	4	4	3	4	5
Howell	Medium	Green and yellow	Sept. to Feb.	Very good.	4	4	3	4	4
Josephine de Malines	Medium	Lemon yellow	Nov. to Jan.	Very good.	5	4	4	4	5
Lawrence	Medium	Green and red	Sept. and Oct.	Good.	4	5	3	5	4
Louise Bonne	Large	Orange	Oct. and Nov.	Good.	4	3	3	3	2
Onondaga	Small	Yellow and green	Dec. to Feb.	Good.	3	4	4	4	4
Seckel	Large	Brown, yellow and red	Sept. and Oct.	Best.	4	3	5	2	2
Sheldon	Large	Green and brown	Sept. and Oct.	Very good.	3	4	4	5	5
Stevens' Genesee	Large	Yellow	September	Good.	3	3	2	3	3
Vicar of Winkfield	Large	Pale yellow	Dec. and Jan.	Hardly good	5	3	3	3	2
White Doyenne	Medium	Light yellow	Sept. and Oct.	Very good.	4	3	4	4	3
Winter Nelis	Medium	Green and grey russet.	Dec. and Jan.	Very good.	4	3	4	4	2
MIDDLESEX —									
Bartlett	Large	Yellow	September	Good.	5	3	4	5	..
Beile Lucrative	Medium	Green	September	Good.	5	3	3	3	..
Beurre Clairgeau	Large	Russet	November	Best	4	3	4	4	4
Bloodgood	Small	Dull yellow	Aug. to Sept.	Good	5	4	4	4	3
Clapp's Favourite	Large	Green, red cheek	Aug. to Sept.	Good	5	4	4	4	..
Dearborn's Seedling	Small	Bright yellow	August	Good	5	5	4	4	3
Flemish Beauty	Large	Brownish or red and yellow	September	Good	5	5	5	5	4
Gondale	Medium	Greenish	Sept. to Nov.	Good	5	4	4	4	4
Howell	Medium	Light yellow	Sept. to Oct.	Medium	3	4	3	4	4
Lawrence	Medium	Light green	Sept. to Oct.	Best	5	5	5	5	4
Louise Bonne	Medium	Green, with brown cheek	Sept. to Oct.	Best	5	5	5	5	3
Seckel	Small	Brown	October	Best	5	5	5	5	3
Tyson	Small to medium	Yellow russet	September	Good	5	3	3	3	3
Washington	Medium	Yellow, if ripe	October	Very good.	4	4	5	5	5
White Doyenne	Medium	Yellow	October	Best	5	5	5	5	..
OXFORD —									
Bartlett	Large	Yellow	Aug. and Sept	Extra good.	2	4	5	5	5
Beurre Bosc	Medium	Yellow	September	Medium	2	2	3	5	1
Beurre d'Anjou	Large	Green	November	Good	3	3	2	4	4
Clapp's Favourite	Large	Yellow, red cheek	August	Good	4	2	4	3	2
Duchesse d'Angouleme	Very large	Brown	Autumn	Good	2	3	2	2	3
Flemish Beauty	Large	Brown russet	October	Good	4	4	5	5	4
Goodale	Small	Green russet	October	Fine	2	3	2	2	1
Howell	Medium	Yellow	August	Good	3	2	2	2	1
Lawrence	Medium	Yellow	Winter	Good	1	3	3	3	1
Louise Bonne	Medium	Orange	September	Good	5	5	4	3	5
Osband's Summer	Medium	Yellow	August	Good	3	2	4	1	3
Oswego Beurre	Large	Brown	October	Good	5	2	3	3	4
Seckel	Small	Brown	Fall	Best	1	3	5	2	3
Sheldon	Medium	Russet	Fall	Good	3	4	5	3	5
Tyson	Small	Golden red	August	Good	3	4	5	3	5
White Doyenne	Medium	Orange with a little russet	October	Good	5	3	5	3	5
Winter Nelis	Medium	Green	Dec. and Feb.	Good	2	3	1	4	2

Tree too tender for this climate.

Soon decays at the core.

Soon decays at the core.

If fair; cracks badly.

If fair; but cracks and blights so as to be of little use.

## COUNTY REPORTS ON VARIETIES OF PEARS GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.	
BRANT—											
Bartlett .....	Medium.	Orange.	September.	Very good..	5	5	5	5	5	2	
Belle Lucrative.	Medium.	Brown.	October.	Good.....	5	3	4	4	5	3	
Beurre Clairgeau.	Very large.	Russet yellow.	Early winter.	Good.....	5	5	5	3	5	5	
Beurre d'Anjou.	Large	Brown.	November.	Very good..	5	5	5	4	5	4	
Beurre Giffard.	Small	Russet.	August.	Very good..	5	5	5	5	5	1	
Clapp's Favourite.	Large	Brown.	First Sept.	Very good..	5	5	5	4	4	1	
Doyenne d'Ete.	Small	Yellow red	Early summer	Good.....	4	5	5	5	5	3	
Duchesse d'Angoulême.	Very large.	Green yellow	October.	Good.....	5	5	4	4	5	5	
Flemish Beauty.	Medium.	Brown.	Sept. and Oct.	Very good..	5	5	5	5	5	4	
Glout Moreau.	Large	Green.	Winter.	Best.....	5	4	5	5	4	4	
Goodale.	Large	Green.	October.	Very good..	5	5	5	3	5	5	
Howell.	Medium.	Green.	October.	Very good..	5	5	5	4	5	4	
Louise Bonne.	Medium.	Brown red	Sept. and Oct.	Best.....	5	5	5	5	5	3	Too tender to export.
Madelaine.	Small	Green red	Summer.	Good.....	5	3	3	5	5	5	Too small.
Napoleon.	Medium.	Green yellow.	October.	Good.....	3	3	3	3	2	2	
Onondaga	Very large.	Green yellow.	October.	Poor.....	5	3	1	4	4	4	
Pound.	Very large.	Green yellow.	Oct. and Nov.	Poor.....	4	3	5	5	5	5	
Rostetzer.	Small	Brownish.	Summer.	Poor.....	4	3	5	5	5	5	Won't keep.
Seckel.	Small	Dark russet.	October.	Best.....	4	3	5	5	5	5	Must be picked green to export.
Sheldon.	Medium.	Russet.	October.	Very good..	5	5	5	4	5	3	
Tyson.	Small	Yellow red	Summer.	Best.....	4	4	5	4	5	4	
Vicar of Winkfield.	Large	Green.	Winter.	Variable...	4	4	4	3	4	4	
White Doyenne.	Medium.	Yellow.	October.	Very good..	5	5	5	4	5	5	Good for preserving, keeps white.
Winter Nelis	Small	Russet	January.	Very good..	5	5	5	5	5	5	
GREY—											
Bartlett .....	Large	Yellow	Aug. and Sept.	Very good..	5	5	4	5	5	5	
Belle Lucrative.	Medium.	Green	September.	Very good..	4	3	4	4	3	5	
Beurre Bosc.	Large	Yellow and russet	Sept. and Oct.	Best.....	4	3	4	4	5	5	
Beurre Clairgeau.	Large	Light green and red	Nov. and Dec.	Good.....	5	4	2	4	5	5	





# COUNTY REPORTS ON VARIETIES OF PEARS GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCORE 1 TO 5.					REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
SOUTH ONTARIO—											
Ananas D'Ete.	Large.	Yellow.	September.	Good.	4	3	3	3	3	3	A very poor bearer on my grounds.
Bartlett.	Large.	Yellow.	September.	Best.	4	4	5	5	5	5	
Belle Lucrative.	Large.	Yellow.	September.	Best.	4	4	5	5	4	4	
Beurre Bosc.	Large.	Russet.	October.	Very good.	4	4	4	4	4	4	
Beurre d'Anjou.	Large.	Green.	October.	Good.	4	3	3	3	5	5	
Beurre Diel.	Large.	Yellow.	October.	Very good.	4	2	4	4	4	4	
Beurre Giffard.	Medium.	Yellow.	October.	Very good.	4	4	4	4	5	5	
Beurre Superfine.	Medium.	Green.	August.	Very good.	4	4	4	4	4	4	
Bloodgood.	Medium.	Yellow.	October.	Good.	4	4	4	3	3	3	
Brandywine.	Medium.	Yellow.	August.	Very good.	4	3	5	4	3	3	
Buffum.	Medium.	Yellow.	October.	Very good.	4	4	5	4	3	3	
Clapp's Favourite.	Very large.	Yellow.	September.	Very good.	4	4	4	4	5	5	This would be a first rate pear if it would keep longer.
Columbia.	Large.	Green.	November.	Good.	4	3	4	4	4	4	Requires high cultivation. This pear spots badly here.
Dearborn's Seedling.	Small.	Yellow.	August.	Very good.	4	5	4	4	2	2	
Duchesse d'Angouleme.	Very large.	Green.	October.	Very good.	4	4	4	4	5	5	
Easter Beurre.	Large.	Green.	January.	Good.	4	3	3	3	4	4	
Flemish Beauty.	Large.	Green.	September.	Very good.	4	4	4	4	5	5	
Glout Moreau.	Medium.	Green.	December.	Very good.	4	4	4	4	3	3	
Goodale.	Large.	Yellow.	October.	Very good.	4	3	4	4	5	5	
Howell.	Large.	Yellow.	October.	Very good.	4	5	4	4	5	5	
Josephine de Malines.	Medium.	Yellow.	November.	Very good.	4	4	3	3	3	3	
Lawrence.	Medium.	Yellow.	December.	Very good.	4	4	4	4	3	3	
Louise Bonne.	Medium.	Green.	September.	Good.	4	4	4	4	3	3	This pear don't sell well in market. Large handsome fruit, sells best if it is inferior in flavour.
Madelaine.	Medium.	Green.	August.	Very good.	4	4	4	4	3	3	
Mount Vernon.	Medium.	Russet.	December.	Good.	4	3	3	3	3	3	
Napoleon.	Medium.	Green.	September.	Good.	4	5	4	4	3	3	
Onondaga.	Very large.	Yellow.	October.	Very good.	3	4	4	4	4	4	
Osband's Summer.	Medium.	Yellow.	August.	Good.	4	4	4	4	3	3	
Pound.	Very large.	Yellow.			4	4	4	4	3	3	

Seckel .....	Small .....	Brown .....	September .....	Best .....	4	5	4	4	4	4
Sheldon .....	Medium .....	Yellow .....	October .....	Good .....	4	3	3	3	3	3
Souvenir du Congress .....	Very large .....	Yellow .....	September .....	Very good .....	3	3	4	4	5	5
Stevens' Genesee .....	Large .....	Yellow .....	September .....	Good .....	4	3	4	4	4	4
Tyson .....	Medium .....	Yellow .....	September .....	Very good .....	4	3	4	4	3	3
Urbaniste .....	Large .....	Yellow .....	October .....	Very good .....	4	4	4	4	4	4
Vicar of Winkfield .....	Large .....	Green .....	November .....	Poor .....	4	5	2	2	2	2
Washington .....	Medium .....	Yellow .....	September .....	Very good .....	4	3	4	4	3	3
White Doyenne .....	Medium .....	Yellow .....	October .....	Very good .....	4	4	4	4	4	4
Windsor .....	Medium .....	Yellow .....	October .....	Good .....	4	3	3	3	3	3
Winter Nelis .....	Medium .....	Green .....	December .....	Very good .....	4	3	4	4	4	4
NORTH ONTARIO—										
Bartlett .....	Large .....	.....	September .....	Very good .....	1	1	1	1	1	1
Beurre d'Anjou .....	Large .....	.....	January .....	Very good .....	1	1	1	1	1	1
Clapp's Favorite .....	Large .....	Yellow .....	September .....	Fair .....	1	1	1	1	1	1
Flemish Beauty .....	Large .....	.....	September .....	Good .....	1	1	1	1	1	1
Sheldon .....	Medium .....	.....	October .....	Very good .....	1	1	1	1	1	1
Seckel .....	Small .....	Yellowish brown .....	October .....	Best .....	1	1	1	1	1	1
FRONTENAC—										
Bartlett .....	Large .....	Yellow .....	September .....	Best .....	3	3	5	4	5	5
Clapp's Favourite .....	Large .....	Yellow .....	September .....	Best .....	5	5	5	5	5	2
Flemish Beauty .....	Large .....	Yellow .....	Sept. and Oct. .....	Very good .....	5	5	4	5	5	5
Osband's Summer .....	Small .....	Russet .....	August .....	Good .....	5	4	5	3	5	1
Oswego Beurre .....	Large .....	Green .....	October .....	Good .....	4	5	1	3	4	5
Seckel .....	Small .....	Brown .....	October .....	Best .....	5	5	5	5	5	5
LEEDS—										
Bartlett .....	Large .....	.....	September .....	Best .....	5	5	5	5	5	5
Flemish Beauty .....	Large .....	.....	October .....	Very best .....	5	5	5	5	5	4
DUNDAS AND STORMONT—										
Bartlett .....	Very large .....	.....	August .....	Very good .....	3	5	5	5	5	5
Doyenne D'Ete .....	Large .....	.....	September .....	Very good .....	5	5	5	5	5	5
Flemish Beauty .....	Large .....	Yellow .....	September .....	Best .....	5	5	5	5	5	5
GROWTH AND BEARING—										
CARLETON AND OTTAWA CITY—										
Flemish Beauty .....										

I don't know but what this pear is good.

I know of but one or two trees of this pear in this part of Ontario.

Tree a good grower and hardy.

Heavy clay, well underdrained.

Grows good, bears every year; on the whole, the best for this section.

The only pear that has been fruited, and it is too tender for this climate.

RUSSELL—Pears have been fruited, but soon die after bearing; climate too severe for this fruit.  
 LANARK—No pears grow here.  
 RENFREW—As yet we have found nothing hardy enough.

## COUNTY REPORTS ON VARIETIES OF PLUMS GROWN IN ONTARIO.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
NORFOLK—											
Bradshaw	Large	Red.	August.	Best.	5	5	5	5	5	5	Clay loam and sandy loam.
Coe's Golden Drop	Large	Yellow	September.	Best.	5	5	5	5	5	5	
Damson	Small	Black	October	Best.	5	5	5	5	5	5	
Duane's Purple	Very large.	Reddish	September.	Very good.	5	5	5	5	5	5	
General Hand	Very large	Yellow	September.	Best.	5	5	5	5	5	5	
German Prune.	Medium.	Blue	September.	Very good.	5	5	5	5	5	5	
Green Gage	Small	Green	September.	Best.	5	5	5	5	5	5	
Imperial Gage.	Large	Green	September.	Best.	5	5	5	5	5	5	
Lombard	Medium.	Red.	September.	Best.	5	5	5	5	5	5	
Peach Plum	Very large.	Red.	August.	Good.	5	5	5	5	5	5	
Pond's Seedling	Largest	Red.	September.	Best.	5	5	5	5	5	5	
Red Magnum Bonum	Largest	Red.	September.	Best.	5	5	5	5	5	5	
Reine Claude de Bavay	Large	Green	Sept. (end of).	Best.	5	5	5	5	5	5	
Yellow Egg	Very large.	Yellow	August.	Very good.	5	5	5	5	5	5	
LINCOLN—											
Bingham	Large	Yellow, spotted with red.	Aug. to Sept.	Good.	3	4	4	3	4	..	Subject to rot.
Bleeker's Gage.	Medium.	Yellow, with white specks.	Last of Aug.	Best.	5	4	4	2	4	..	
Bradshaw	Large	Violet red.	August.	Good.	3	4	2	5	5	..	
Coe's Golden Drop.	Large	Light yellow	September.	Good.	3	4	3	5	5	..	
Columbia	Largest	Purple	Aug. to Sept.	Good.	4	4	1	5	5	..	
Damson	Small	Purple or blue.	September.	Good.	5	5	1	5	4	..	
Duane's Purple.	Large	Purple	August.	Good.	3	3	1	4	4	..	
General Hand	Large	Yellow	September.	Good.	4	4	1	5	5	..	
Glass'	Large	Blue	September.	Good.	4	4	2	4	4	..	
Green Gage	Small	Green	August.	Best.	3	4	5	1	4	..	
Imperial Gage.	Medium to large.	Green, tinged with yellow	September.	Best.	4	5	5	2	4	..	
Jefferson	Large	Golden yellow	August.	Best.	4	4	5	2	5	..	
Lawrence's Favourite	Large	Yellowish green.	August.	Best.	4	4	5	2	5	..	
Lombard	Medium.	Red.	Aug. to Sept.	Good.	5	5	2	5	4	..	
Monroe	Medium.	Yellow	September.	Good.	4	4	2	4	3	..	
Peach Plum	Large	Reddish, with pale bloom	July to Aug.	Good.	1	2	2	4	5	..	
Pond's Seedling	Large	Bright red.	September.	Good.	4	1	1	5	5	..	



Reine Claude de Bavay	Large	Green	October	Good	4	5	3	4	5	One of the best late.
Washington	Large	Dull yellow	Aug. to Sept.	Best	3	4	5	4	5	
Yellow Egg	Large	Yellow	September	Good	4	5	2	5	5	
Huron—										
Bingham	Large	Yellow	End August	Very good	5	4	3	3	4	4
Bleeker's Gage	Medium	Yellow	End August	Very good	5	3	4	4	5	5
Bradshaw	Large	Reddish purple	August	Good	4	4	3	4	4	5
Coe's Golden Drop	Large	Yellow	Sept. (end)	Good	4	5	2	4	5	5
Columbia	Very large	Purple	Sept. (first)	Good	3	3	3	4	4	5
Copper	Medium	Copper colour	Oct. (first)	Good	5	5	4	4	4	4
Damson	Small	Purple	September	Good	5	5	4	4	2	3
Denniston's Superb	Medium	Green and yellow	Aug. (end)	Very good to best	4	4	4	4	5	5
Diamond	Very large	Black	September	Poor	4	3	3	2	3	3
Duane's Purple	Very large	Purple	Aug. (middle)	Good	5	4	1	4	4	4
General Hand	Very large	Green and yellow	September	Good	5	1	1	4	4	5
German Prune	Large	Purple	September	Good	5	4	2	3	2	2
Glass	Large	Dark purple	Sept. (end)	Good	5	4	3	4	4	5
Green Gage	Small	Green and yellow	August	Best	5	4	5	5	5	5
Guthrie's Apricot	Large	Yellow	August (end)	Good	5	3	1	3	3	3
Huling's Superb	Large	Green and yellow	August (end)	Good	4	3	2	3	4	4
Imperial Gage	Medium	Green and yellow	September	Best	5	5	4	4	4	5
Italian Prune (Fellemborg)	Medium	Dark blue	October	Good	5	3	1	3	3	3
Jefferson	Large	Yellow and red	August (end)	Very good	4	3	5	4	4	5
Lawrence's Favourite	Large	Green and yellow	August	Very good	4	3	4	4	4	5
Lombard	Medium	Red and purple	August	Good	5	5	2	4	5	4
McLaughlin	Large	Yellow and red	August	Very good to best	5	3	4	3	4	5
Monroe	Medium	Green and yellow	September	Good	5	3	2	3	3	3
Moore's Arctic	Medium	Dark purple	Sept. (middle)	Good	5	5	2	4	4	5
Orange	Very large	Orange	Sept. (first)	Good	4	4	2	4	3	4
Peach Plum	Large	Light red	Aug. (first)	Good	2	3	2	3	2	5
Peter's Yellow Gage	Medium	Yellow	Aug. (end)	Good	4	3	3	3	3	5
Pond's Seedling	Large	Yellow and red	September	Good	5	4	3	4	4	5
Prince Englebert	Large	Purple	Sept. (first)	Good	5	5	4	4	5	5
Prince's Yellow Gage	Medium	Yellow	Aug. (middle)	Very good	5	5	4	4	5	5
This tree is said by some growers to be proof against black knot. One grower says, "I have a Prince's Yellow Gage that has never had black knot. It is 20 years old, and has been surrounded by other kinds, some of which have been covered with the knot."										
Quackenbush	Large	Dark purple	September	Good	5	4	3	4	4	5
Red Magnum Bonum	Large	Light red	September	Good	5	4	3	4	4	4
Reine Claude de Bavay	Large	Green and yellow	October (first)	Best	4	4	4	4	4	5
Smith's Orleans	Large	Reddish purple	August (end)	Very good	4	5	3	4	4	4
Victoria	Large	Yellow, purple shade	September	Good	4	4	1	3	4	5
Washington	Very large	Green and yellow	August (end)	Very good	5	3	4	5	5	5
Yellow Egg	Very large	Yellow	August (end)	Good	5	5	1	5	5	5

Valuable for drying.

Tree frequently kills itself with over-bearing.

## COUNTY REPORTS ON VARIETIES OF PLUMS GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.					REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.		Foreign Market.
BRUCE—											
Bingham .....	Large .....	Yellow .....	End August ..	Very good ..	4	4	3	3	4	..	
Bradshaw .....	Large .....	Reddish purple ..	August .....	Good .....	4	4	3	4	4	..	
Coe's Golden Drop ..	Large .....	Yellow .....	End Sept. ....	Good .....	4	5	2	4	5	..	
Damson .....	Small .....	Purple .....	September .....	Good .....	4	4	..	3	2	..	
Duane's Purple .....	Very large ..	Purple .....	August .....	Good .....	3	4	1	4	4	..	
General Hand .....	Very large ..	Green and yellow ..	September .....	Good .....	5	1	1	4	5	..	
German Prune .....	Large .....	Purple .....	September .....	Good .....	5	3	2	3	2	..	
Glass' .....	Large .....	Dark purple .....	September .....	Good .....	5	3	2	3	2	..	
Green Gage .....	Small .....	Green and yellow ..	August .....	Best .....	4	4	5	5	5	..	
Huling's Superb .....	Large .....	Green and yellow ..	August .....	Good .....	4	3	2	4	3	..	
Imperial Gage .....	Medium .....	Green and yellow ..	September .....	Best .....	4	5	4	4	4	..	
Italian Prune (Fellemborg) ..	Medium .....	Dark blue .....	October .....	Good .....	4	3	1	3	3	..	
Jefferson .....	Large .....	Yellow and red .....	End August .....	Very good ..	4	3	5	4	5	..	
Lombard .....	Medium .....	Red and purple .....	August .....	Good .....	5	5	2	4	5	..	
McLaughlin .....	Large .....	Yellow and red .....	August .....	Very good ..	4	3	4	3	4	..	
Peach Plum .....	Large .....	Light red .....	August .....	Good .....	3	3	2	3	2	..	
Pond's Seedling .....	Large .....	Yellow and red .....	September .....	Good .....	4	4	3	4	4	..	
Prince Englebert .....	Large .....	Purple .....	September .....	Good .....	3	5	4	4	4	..	
Red Magnum Bonum .....	Large .....	Light red .....	September .....	Good .....	4	4	3	3	4	..	
Reine Claude de Bavay .....	Large .....	Green and yellow ..	October .....	Best .....	4	4	3	4	4	..	
Smith's Orleans .....	Large .....	Reddish purple .....	End August .....	Very good ..	4	4	3	3	4	..	
Victoria .....	Large .....	Yellow and purple ..	Aug. and Sept ..	Good .....	3	4	1	3	4	..	
Washington .....	Very large ..	Green and yellow ..	End August .....	Very good ..	5	3	4	5	5	..	
Yellow Egg .....	Very large ..	Yellow .....	End August .....	Good .....	5	4	1	5	5	..	
MIDDLESEX—											
Bradshaw .....	Very large ..	Red crimson .....	Early Sept. ....	Best .....	4	3	5	5	5	..	Rich soil; any kind.
Damson .....	Small .....	Purple .....	August .....	Best .....	4	3	4	5	5	..	“
Duane's Purple .....	Large .....	Purple .....	September .....	Best .....	3	2	5	5	5	..	Shy bearer.
Green Gage .....	Medium .....	Green .....	August .....	Best .....	4	4	5	5	5	..	
Lombard .....	Large .....	Purple .....	September .....	Very good ..	5	5	4	4	4	..	Much affected by black knot.

Pond's Seedling. Washington	Large Large	Crimson. Green	September August	Good. Best.	3 4	2 4	4 5	5 5	Inclined to rot. Less affected by black knot than others.
OXFORD--									
Damson	Medium	Blue	September	Good	5	5	3	3	Clay subsoil well cultivated. All of the sorts named are grown on the same soil.
Duane's Purple	Large	Russet	September	Good	5	5	4	5	
German Prune	Large	Brown	Aug. or 1st Sep.	Good	5	3	2	4	
Glass	Large	Brown	September	Middling	5	1	2	4	
Green Gage	Medium	Green	Aug. to 1st Sep.	Very good	5	5	5	5	
Imperial Gage	Large	Orange	Aug. to Sept.	Very good	5	5	3	4	
Lombard	Large	Yellow russet	September	Good	5	5	3	4	
Pond's Seedling	Very large	Between red and russet	Last of Sept.	Good	5	5	4	5	
Prince's Yellow Gage	Medium	Yellow	September	Good	5	5	5	5	
Red Magnum Bonum	Large	Yellowish red	1st September	Good	5	3	4	5	
Yellow Egg	Very large	Yellow	September	Good	5	5	4	3	
BRANT--									
Bradshaw	Large	Purple	August	Good	4	3	5	5	Tree thrives well; gives no fruit. Very shy bearer. Must be picked green to export.
Coe's Golden Drop	Medium	Yellow	September	Very good	5	3	4	5	
Columbia	Small	Purple	August	Good	5	5	3	4	
Damson	Small	Blue	October	Poor	5	5	3	2	
Diamond	Very large	Black	September	Very good	5	3	3	4	
Duane's purple	Medium	Purple	September	Good	5	5	5	5	
Glass	Small	Green	September	Good	5	4	5	5	
Imperial Gage	Medium	Greenish yellow	Aug. to Sept.	Best	4	5	5	5	
Jefferson	Medium	Yellow, red cheek	September	Very good	4	4	5	4	
Lombard	Medium	Purple	September	Good	4	5	3	5	
Pond's Seedling	Very large	Reddish purple	October	Good	5	4	2	4	Carries well; good cooking. Too small for profit.
Prince's Yellow Gage	Medium	Yellow	August	Good	4	4	4	2	
Reine Claude de Bay	Small	Yellow	October	Good	4	4	4	4	
Victoria	Large	Reddish purple	October	Good	4	4	4	4	
Washington	Large	Light green	September	Best	5	5	5	5	
GREY--									
Bingham	Large	Yellow	End August	Very good	4	3	3	4	
Bleeker's Gage	Medium	Yellow	End August	Very good	3	3	4	5	
Bradshaw	Large	Reddish purple	August	Good	4	3	4	5	
Coe's Golden Drop	Large	Yellow	End Sept.	Good	4	4	3	5	
Damson	Small	Purple	September	Good	5	5	3	3	
Duane's Purple	Very large	Purple	Middle Aug.	Good	4	4	2	4	
General Hand	Very large	Green and yellow	September	Good	5	1	2	4	
Glass	Large	Dark purple	End Sept.	Good	4	4	2	4	
Green Gage	Small	Green and yellow	August	Best	4	4	5	4	
Imperial Gage	Medium	Green and yellow	September	Best	5	5	4	4	



## COUNTY REPORTS ON VARIETIES OF PLUMS GROWN IN ONTARIO.—Continued.

VARIETIES— CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCALE 1 TO 5.						REMARKS. SOIL, CULTIVATION, ETC.	
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.		
GREY—Continued.												
Jefferson.....	Large.....	Yellow and red.....	End August.....	Very good.....	4	3	4	4	5	5		
Lombard.....	Medium.....	Red and purple.....	August.....	Good.....	4	4	5	4	4	4	Liable to over-bear.	
McLaughlin.....	Large.....	Yellow and red.....	August.....	Very good.....	4	3	5	3	4	4	Fruit rots badly when matured.	
Peach Plum.....	Large.....	Light red.....	August.....	Good.....	2	2	3	3	3	3		
Pond's Seedling.....	Large.....	Yellow and red.....	September.....	Good.....	4	3	5	5	5	5	One of the most profitable for shipping.	
Reine Claude de Bavay.....	Large.....	Green and yellow.....	October.....	Best.....	4	3	4	4	4	4		
Smith's Orleans.....	Large.....	Reddish purple.....	August.....	Very good.....	4	4	3	4	4	4		
Victoria.....	Large.....	Yellow and purple.....	September.....	Good.....	4	5	3	5	5	5	Liable to over-bear and rot.	
Washington.....	Very large.....	Green and yellow.....	End August.....	Very good.....	5	4	4	4	5	5		
Yellow Egg.....	Very large.....	Yellow.....	August.....	Good.....	5	5	3	5	5	4		
SIMCOE—												
Bradshaw.....	Large.....	Red purple.....	September.....	Good.....	4	4	2	5	5	N	g in cultivation.	
Glass'.....	Large.....	Blue.....	September.....	Good.....	4	3	2	3	5	5		
Green Gage.....	Medium to small.....	Green.....	August.....	Very good.....	3	3	5	3	5	5		
Imperial Gage.....	Large.....	Yellow.....	August.....	Good.....	5	3	2	2	5	5		
Lombard.....	Medium.....	Violet blue.....	September.....	Very good.....	4	5	5	5	5	5		
Pond's Seedling.....	Large.....	Purple.....	September.....	Good.....	5	5	3	4	4	5		
Washington.....	Large.....	Yellow.....	September.....	Good.....	4	5	4	5	5	5		
Yellow Egg.....	Large.....	Yellow.....	September.....	Very good.....	5	4	3	5	5	5		
CARDWELL—												
Bradshaw.....												Grown, but not fruited.
Damson.....	Large.....	Purple.....	September.....	Good.....	4	4	3	4	4	4		Clay loam.
Fellemburg (Italian Prune).....												Winter-killed.
Green Gage.....	Large.....	Green.....	September.....	Best.....	5	4	4	5	4	4		Clay loam.
Lombard.....	Large.....	Reddish purple.....	September.....	Best.....	4	4	4	5	5	5		
Yellow Egg.....	Medium.....	Yellow.....	September.....	Good.....	4	4	4	5	4	4		Clay loam.

## YORK—

Bingham	Medium.	Yellow	Sept. 15th	Good	4	5	3	4	3
Bleeker's Gage	Medium.	Yellow	Sept. 12th	Very good	3	4	2	3	4
Bradshaw	Large	Very red	September 1st	Good	2	3	3	5	5
Coe's Golden Drop	Large	Yellow	Sept., last	Good	4	5	3	4	3
Denniston's Superb	Large	Green	August 3rd	Good	3	5	3	4	3
Duane's Purple	Very large	Purple	September 1st	Very good	2	3	4	2	5
Fellemborg (Italian Prune)	Medium	Blue	Sept., last	Good	4	5	2	5	3
General Hand	Large	Greenish yellow	Sept., middle	Good	3	2	3	2	5
German Prune	Medium	Blue	October 1st	Good	4	5	2	5	3
Green Gage	Small	Green	Aug., middle	Good	5	5	3	4	1
Huling's Superb	Large	Yellow green	Aug., middle	Good	2	4	4	3	3
Imperial Gage	Large	Green	Aug., middle	Very good	3	5	5	4	5
Lombard	Medium	Very red	August, last	Good	2	5	5	3	4
Moore's Arctic	Medium	Blue	September	Good	1	3	5	4	4
Peach Plum	Large	Reddish	August, last	Very good	4	3	2	5	3
Peter's Yellow Gage	Large	Yellow	Sept., last	Good	3	5	1	4	4
Pond's Seedling	Large	Red	September	Very good	3	5	3	4	3
Reine Claude de Bavay	Large	Green	Sept., last	Best	3	4	2	4	3
Smith's Orleans	Large	Purple	September	Very good	3	4	3	5	4
Victoria	Large	Purple red	Aug., last	Best	3	4	4	5	5
Washington	Large	Yellow green	September	Very good	2	3	4	4	4
Yellow Egg	Large	Yellow							

## SOUTH ONTARIO—

Bingham	Medium.	Yellow	September	Very good	4	3	4	4	3
Bleeker's Gage	Medium	Yellow	September	Very good	4	4	4	4	3
Bradshaw	Very large	Brown	September	Good	4	3	4	5	5
Coe's Golden Drop	Large	Yellow	October	Good	4	2	2	2	3
Columbia	Large	Brown	September	Very good	4	3	3	3	3
Denniston's Superb	Very large	Yellow	September	Very good	4	3	4	4	3
Duane's Purple	Very large	Red	September	Very good	4	3	4	4	5
Fellemborg (Italian Prune)	Medium	Brown	October	Very good	5	3	3	3	3
General Hand	Very large	Yellow	September	Best	4	3	5	5	5
German Prune	Medium	Brown	October	Good	5	2	3	3	2
Glass'	Very large	Brown	October	Good	4	2	3	3	4
Green Gage	Medium	Green	August	Best	5	5	5	4	3
Huling's Superb	Large	Green	August	Very good	4	3	4	4	4
Imperial Gage	Large	Green	August	Best	4	5	5	4	4
Jefferson	Large	Green	August	Best	4	3	5	5	4
Lawrence's Favorite	Large	Yellow	September	Best	4	3	5	5	4
Lombard	Medium	Red	August	Best	3	5	4	4	4
McLaughlin	Large	Yellow	September	Best	4	5	5	5	5
Monroe	Medium	Yellow	September	Very good	3	3	4	4	4
Peach Plum	Large	Brown	September	Good	3	3	4	4	4
Peter's Yellow Gage	Large	Yellow	September	Very good	4	4	4	4	4

The Lombard trees are dying very fast in this county.  
Plums do best on clay loam with good cultivation. A large number of the blue and red varieties died last year in this part of the country.

COUNTY REPORTS ON VARIETIES OF PLUMS GROWN IN ONTARIO.—*Concluded.*

VARIETIES — CLASSIFIED BY COUNTIES.	SIZE.	COLOUR.	SEASON.	QUALITY.	SCORE 1 TO 5.						REMARKS, SOIL, CULTIVATION, ETC.
					Hardiness.	Productiveness.	Dessert.	Cooking.	Home Market.	Foreign Market.	
SOUTH ONTARIO—Continued.											
Pond's Seedling.....	Very large	Red.....	September.....	Good.....	4	5	3	4	5	5	
Prince's Yellow Gage.....	Large.....	Yellow.....	September.....	Good.....	4	4	4	4	4	4	
Quackenboss.....	Large.....	Brown.....	October.....	Very good.....	4	4	4	4	4	4	
Red Magnum Bonum.....	Large.....	Red.....	October.....	Good.....	3	2	2	3	4	4	
Reine Claude de Bavay.....	Large.....	Green.....	October.....	Good.....	4	5	3	3	3	3	
Smith's Orleans.....	Large.....	Brown.....	September.....	Good.....	4	4	4	4	4	4	
Victoria.....	Large.....	Brown.....	September.....	Good.....	3	3	3	3	4	4	
Washington.....	Very large	Yellow.....	September.....	Best.....	4	4	5	5	5	5	
Yellow Egg.....	Very large	Yellow.....	September.....	Good.....	4	3	3	4	5	5	
NORTH ONTARIO—											
Bradshaw.....	Very large.....	Dark red.....	August.....	Good.....	1	1	1	1	1	1	The plum does well here on clay soil when well drained and sheltered.
Coe's Golden Drop.....	Large.....	Yellow.....	September.....	Very good.....	1	1	1	1	1	1	
Imperial Gage.....	Large.....	Green.....	August.....	Very good.....	1	1	1	1	1	1	
Lombard.....	Medium.....	Violet red.....	September.....	Good.....	1	1	1	1	1	1	Does the best here.
Monroe.....	Medium.....	.....	.....	Very good.....	1	1	1	1	1	1	
Pond's Seedling.....	Very large.....	Light red.....	September.....	Coarse.....	1	1	1	1	1	1	
Reine Claude de Bavay.....	Medium.....	Green.....	September.....	Best.....	1	1	1	1	1	1	Fruit rots some on tree.
Washington.....	Large.....	Green and red.....	August.....	Very good.....	1	1	1	1	1	1	
Yellow Egg.....	Large.....	Yellow.....	August last.....	Coarse.....	1	1	1	1	1	1	
FRONTENAC—											
Coe's Golden Drop.....	Large.....	Purple.....	September.....	Good.....	4	5	4	4	5	5	
Denniston Superb.....	Large.....	Yellowish green.....	End of Aug.....	Best.....	5	4	4	5	5	4	
Duane's Purple.....	Large.....	Purple.....	September.....	Best.....	3	5	5	4	5	5	
General Hand.....	Very large.....	Yellow.....	September.....	Best.....	5	5	5	5	5	5	
Imperial Gage.....	Very large.....	Green.....	August.....	Best.....	5	5	5	5	5	5	Stiff clay, open cultivation; well manured with barn-yard manure and salt.
Lombard.....	Medium.....	Red.....	September.....	Best.....	5	5	5	5	5	5	
McLaughlin.....	Medium.....	Green.....	Sept. to Oct.....	Very good.....	4	5	3	3	5	5	



Pond's Seedling .....	Large .....	Deep purple .....	End of Aug. ...	Very good ..	5	5	4	5	5	5
Red Magnum Bonum .....	Large .....	Red .....	September ..	Best .....	5	5	5	5	5	5
Yellow Egg .....	Large .....	Yellow .....	September ..	Good .....	5	5	3	3	3	3
LEEDS—										
Coe's Golden Drop .....	Large .....	Light yellow .....	September ..	Good .....	5	5	4	5	5	5
Glass' .....	Large .....	Blue .....	September ..	Best .....	5	4	5	5	5	5
Imperial Gage .....	Large .....	Greenish .....	August .....	Best .....	5	5	4	5	5	5
Lombard .....	Medium .....	Reddish .....	August .....	Good .....	5	5	5	5	5	5
Yellow Egg .....	Large .....	Yellow .....	September ..	Good .....	5	5	4	5	5	5
RUSSELL—										
Glass' .....	Large .....	Dark purple .....	Sept. 20th ..	Good .....	3	2	3	3	4	..
Green Gage .....	Medium .....	Yellow-green .....	Sept. 15th ..	Good .....	3	1	4	4	3	..
Peach Plum .....	Medium .....	Yellow .....	Sept. 20th ..	Good .....	2	2	4	4	4	..
Prince Englebert .....	Very large .....	Red .....	Sept. 20th ..	Good .....	4	3	3	3	5	..
Red Magnum Bonum .....	Large .....	Red .....	Sept. 10th ..	Fair .....	5	4	2	4	3	..
CARLETON AND OTTAWA CITY—										
Glass' .....	Large .....	Dark purple .....	Sept. 20th ..	Good .....	3	2	3	3	4	..
Green Gage .....	Medium .....	Yellow-green .....	Sept. 15th ..	Good .....	3	1	4	4	3	..
Peach Plum .....	Medium .....	Yellow .....	Sept. 20th ..	Good .....	2	2	4	4	4	..
Prince Englebert .....	Very large .....	Red .....	Sept. 20th ..	Good .....	4	3	3	3	5	..
Red Magnum Bonum .....	Large .....	Red .....	Sept. 10th ..	Fair .....	5	4	2	4	3	..
LANARK—										
Lombard .....	Large .....	Blue .....	September ..	Good .....	2	..	..	..	..	..

Valuable for this climate.

Quite hardy here.

Valuable for this climate, but not an abundant bearer.

Quite hardy ; not a free bearer.

{ Only the wild red plums are grown in this county, except under the most favoured circumstances.

RUSSELL—As yet we have found nothing excepting the common red plum that can be grown here, except in very favoured localities.

2879









BROCK UNIVERSITY LIBRARY



3 9157 00832211 0

SPCL SB 354-6 C2 F783 1884

